NATIONAL FISHERMAN

MAY 1955

May31'55

Formerly ATLANTIC FISHERMAN

LIGHTER, STRONGER, EASIER TO HANDLE...WET OR DRY!

COLUMBIAN *Stabilized** NYLON or DACRON

Here is pictorial proof of the Columbian "Stabilization" Process. At left is a cut end of ordinary nylon.

In the center, a cut end of Columbian "Stabilized" Nylon remains completely formed, with no loss due to untwisting.

The strands of Columbian "Stabilized" Nylon on the right were "unlayed" manually. Each strand retains its form, each yarn holds the twist.

Columbian nylon or dacron seine twine and rope is soft-handling, easy to knot and splice when new . . . yet holds its lay even after months of continuous usage in fresh or salt water. Every strand retains its form, every yarn keeps the twist given it by skilled Columbian workers, because it's "Stabilized."

Columbian "Stabilized" Nylon can be furnished in either Filament or Spun construction. Dacron is recommended in the Spun form. Columbian's long experience with both synthetic and Manila fibres has developed a complete selection of the ropes and twines best suited to any fisherman's needs.

FREE! Send for your sample card of Columbian "Stabilized" Nylon and Dacron Seine Twines today. Just write . . .

COLUMBIAN ROPE COMPANY
Auburn, "The Cordage City", N. Y.

* Pioneered and developed for the Army Air Force during World War II, "Stabilized" nylon and dacron cordage is made only by Columbian, under Pat. No. 2343892.

ROPE COLUMBIAN TWINES

THE COMPLETE LINE OF NYLON, DACRON AND MANILA CORDAGE FOR FISHERMEN

Boston Office and Warehouse **38 Commercial Wharf**

STANDARD ENGINEER'S REPORT

DATA

LUBRICANT RPM Gear Lubricant

UNIT Fishing Boat–M.V. Lincoln
Caterpillar D17000 Diesel engine

PART Reverse gear–self-lubricated

CONDITIONS Fishing off California coast

FIRM Consolidated Fisheries, Inc., San Francisco, Calif.

No transmission gear trouble in 8 years of fishing!

RPM GEAR LUBRICANT in the reverse gear of Consolidated Fisheries' M. V. Lincoln, shown below, prevented gear trouble since the gears were installed 8 years ago. Inspected at the end of that time, they showed very little wear in spite of tough service bucking tides and foul weather off the California coast. Gears were worked hard by the boat's Caterpillar D17000 diesel, were subjected to shocks and heavy intermittent loads when propeller came out of water during heavy seas. Tony Gomez, Engineer, says, "I've used RPM Gear Lubricant in this boat and others for 15 years and never lost a gear. It holds down wear, protects against shock even under heavy loads and constantly changing speeds."

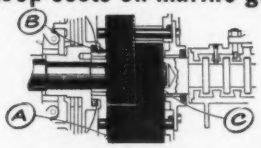
THE M.V. LINCOLN, 59 feet long and 16-foot beam, is one of a fleet of Consolidated Fisheries' boats that fish some 600 miles of coastal waters. RPM Gear Lubricant is used in all their gears.

REMARKS: In transmissions, net-hoist gears and other gear trains, RPM Gear Lubricant provides a tough lubricating film because of its very high oiliness qualities and stability. Recommended for all types of conventional gears, and also for bronze worm gears. (For hypoids of all kinds, RPM Multi-Service Gear Lubricant is recommended.)

RPM

TRADEMARK "RPM" REG. U.S. PAT. OFF.

How RPM Gear Lubricant reduces upkeep costs on marine gears



RPM Gear Lubricant in marine transmissions will prevent excessive bearing and gear wear. It comes in viscosity grades to meet all conditions.

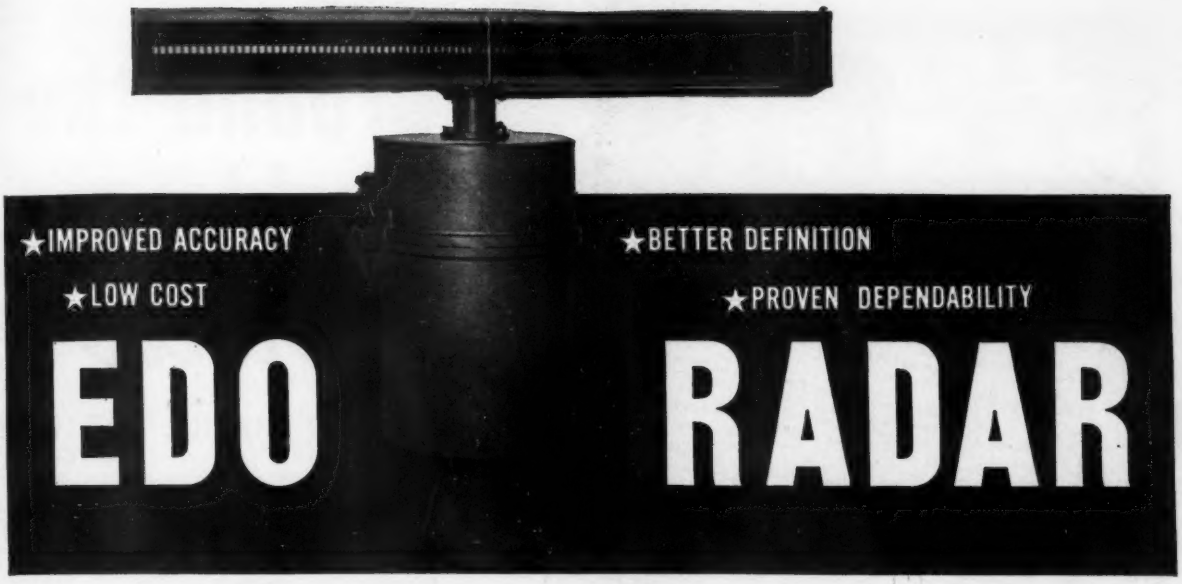
A. Contains foam inhibitor—prevents retention of air whipped into lubricant by gears and building up pressure.

B. Oiliness compound helps provide tough lubricating film—withstands shock and overloads and prevents wear.

C. High resistance to oxidation prevents thickening; assures lubrication in extreme temperatures.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20 • STANDARD OIL COMPANY OF TEXAS, El Paso
THE CALIFORNIA OIL COMPANY, Barber, New Jersey • THE CALIFORNIA COMPANY, Denver 1, Colorado



with PATENTED SLOTTED WAVEGUIDE ANTENNA

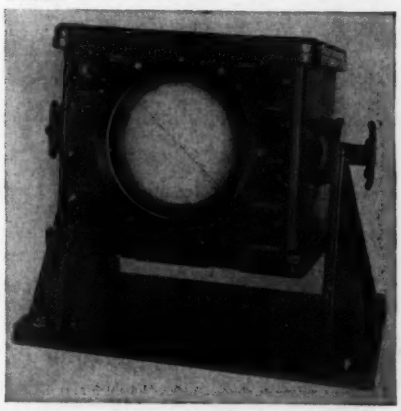
Now, EDO, famed builder of high performance sonar for the United States Navy and other fine marine electronic equipment for commercial craft, announces the Edo Model 320 Radar.

This fine, thoroughly-tested piece of electronic equipment has been created especially for use in small craft where space and generator capacity are limited. Operating on a wave length of 3.2 centimeters (X-band), it provides clear, precise definition of shore line, buoys, boats or other hazards on five scales—1, 2, 5, 10 or 20 miles—and showing objects as close as 25 yards—making it useful for operation in both open and restricted waters.

The exceptional performance of the Edo Model 320 Radar stems from the use of the compact, patented, slotted waveguide antenna which reduces side lobe reflections. This exclusive antenna cuts down windage and is impervious to weather. The Edo Radar has been designed for ease of operation, long life and simple maintenance. Despite its superior performance it is in the lowest-priced bracket bringing the time and money-saving advantages of radar to many owners of smaller boats who could not previously afford this latest aid to navigation.

You can install Edo Radar in your craft with utmost confidence, for it bears the famed Edo Flying Fish emblem, known and respected as the mark of superior, dependable performance on depth sounders, survey depth recorders, the famed Edo Fishscope, the Edo Loran and other marine electronic equipments. Write for further information.

Exceptional performance of Edo Model 320 Radar centers around this exclusive, patented, slotted waveguide antenna which reduces side lobe reflections. Transmitting unit is mounted directly under antenna to reduce power loss customarily encountered with long waveguide runs from mast to wheel house.



PPI Display Unit can be conveniently mounted on bulkhead, desk or overhead and is designed for greatest possible ease of operation. It can be fitted with hood for viewing under bright-light conditions.

Edo

Edo CORPORATION College Point, L.I., N.Y. SINCE 1925

CAPTAIN
IRVING JOHNSON

around the world *with* Surrette

IRVING M. JOHNSON
Commander U.S.N.R.

BRIGANTINE YANKEE
SIXTH WORLD VOYAGE

NOVEMBER 1, 1953,
TO
MAY 1, 1955

Off the Cape of Good Hope
January 6, 1955

Mr. John Surrette
Surrette Storage Battery Co., Inc.
Salem, Massachusetts
U.S.A.

"...We have been sailing through the hottest part of the Tropics and your SURRETTE BATTERIES have stood up better than any previously taken on our trips. We use them constantly with heavy loads and have been able to go at least four months without adding water."

"These SURRETTE marine batteries are obviously way ahead of those we previously used as we have not yet noticed any change in capacity. In actual volume of water used compared with previous batteries of identical size we find the SURRETTES are using less than half as much. At the same time the SURRETTES are carrying a slightly larger load while the temperature and charging conditions are the same. ...This shows that SURRETTE Batteries have way better than a third more capacity."

"To say that I am pleased with them is putting it mildly."

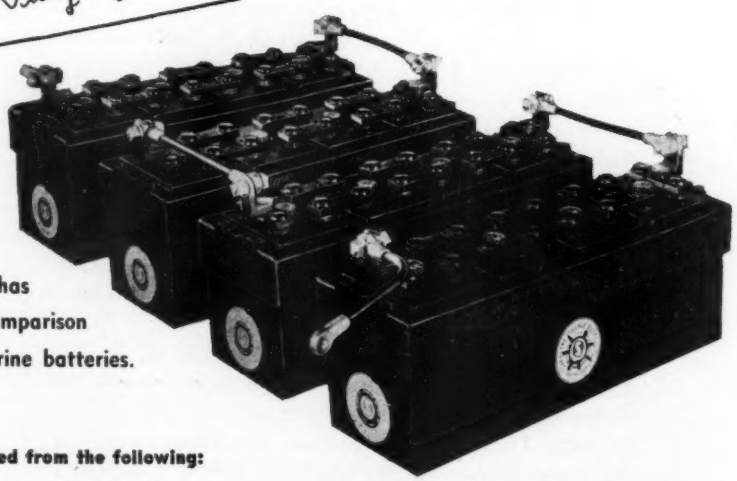
Sincerely yours,
Irving M. Johnson

WORLD'S BEST MARINE BATTERY!

FOR WORK BOATS

PLEASURE BOATS

- Greatest Power Per Pound of Weight
- Greatest Capacity Size for Size
- Greatest Life Expectancy in Their Class
- Greatest Dependability—Capacity Per Dollar Expended



More and more of the country's leading marine builders and operators will use no other. Their choice has been influenced by their experience in comparison with many other leading brands of marine batteries.

Surrette Marine Batteries can be obtained from the following:

NOVA SCOTIA
W. N. White & Company
Halifax

MAINE
Harris Company
Portland

MASSACHUSETTS
Surrette Supply Company
Peabody
Marblehead Yacht Yard, Inc.
James E. Graves Co.
Marblehead
Louis Posner
Fish Pier
Boston
Leo's Battery Service
New Bedford

RHODE ISLAND
George's Battery & Marine Service
Newport

CONNECTICUT
Robert Horman
New Haven
Edward Welles
Mystic

NEW YORK
Surrette Storage Battery Co. (Warehouse)
205 10th Avenue,
New York City
Maripet Supply Corporation
New York 17, N. Y.
Freeport Marine Supply
Freeport, N. Y.
George Wingerter
Howard Beach, L. I., N. Y.
Marine Electric Corporation
Brooklyn, N. Y.
United Boat & Dock Service
City Island, N. Y.
Sutter Brothers
Gerritson Beach
Brooklyn, N. Y.
E. F. Gossy
137 Dartmouth Drive
Hicksville
H. F. Wyatt
Old Country Road
Speonk

NEW JERSEY
Charles W. Rogers
Manasquan

PENNSYLVANIA
Johnson & Towers
Philadelphia
Quaker Battery Service Company
Philadelphia

MARYLAND
United Oil Company
Baltimore
Johnson & Towers
Baltimore
B. R. Smith
1100 Cathedral Street
Baltimore

WASHINGTON, D. C.
Capitol Marine Supply

VIRGINIA
Norfolk Marine Company
Norfolk

NORTH CAROLINA
Machine & Supply
Beaufort

SOUTH CAROLINA
Hay Oil Company
Charleston

FLORIDA
Bay Machine & Welding
Panama City
Tropex Batteries, Inc.
Miami

ALABAMA
Chapman Electric Company
Mobile

MISSISSIPPI
Kennedy Marine Company
Biloxi

LOUISIANA
Olympic Power Application Co.
New Orleans
Twenty Grand, Inc.
Morgan City
W. J. Westerfield Company
New Orleans

TEXAS
McIntosh Electric Supply Co.
Beaumont
John O. Roby
2417 Polk St.
Houston
Stewart & Stevenson Services
Houston & Corpus Christi
Nash & Cotton
Galveston
Producers Marine Service
Port Isabel
Ewing Battery Co.
Brownsville
Marine Electric Service
Box 56, Port Isabel
Gulf Coast Electric Service
Aransas Pass

Surrette MARINE BATTERIES

Surrette Storage Battery Company, Inc., Jefferson Avenue, Salem, Mass.

May 1955 Vol. 36 No. 4

In this issue

Pump and Electricity Tried for Catching Bait 11

Need for Quality Products Stressed at Convention 12

Canadians Experimenting with Mid-Water Trawl for Herring 15

New Hatteras Trawlers Make Dual Trial Run 17

An Analysis of Starfish Control as Practiced by Oystermen 19

Scalloper "Rush" Begins Promising Career 21

NEWS REPORTS

Alabama 22
Boston 45
California 26
Connecticut 30
Florida 31
Georgia 33
Gloucester 47
Great Lakes 28
Louisiana 32
Maine 18
Maryland 16
Massachusetts 45, 46, 47
Michigan 28
Mississippi 24
New Bedford 46
New Jersey 35
New York 44
North Carolina 43
Ohio 28
Oregon 24
Pacific Coast 23-26
Provincetown 45
Rhode Island 44
Texas 32
Virginia 16
Washington 23
Wisconsin 28

REGULAR DEPARTMENTS

Fishery Progress 8
Equipment and Supply News 36
Boat Catches for April 40
Where-to-Buy Directory 48
Foreign Bailings 49
Classified Advertising 50

Yearly subscription rates: United States, $3; Canada, $4; Foreign, $5. Single copies, 35¢.

Accepted as Controlled Circulation publication at Manchester, N. H.

NATIONAL FISHERMAN

Formerly ATLANTIC FISHERMAN

Serving the Commercial Fishing Industry of the United States

Industry Promotion Campaigns Prove Effective

A National tuna sales campaign to move into trade channels the record stocks of canned tuna will get under way this month. It is a joint industry-Government promotion program in which the U. S. Fish & Wildlife Service is cooperating with the Pacific Coast tuna industry.

Leaders of the industry are confident that the high inventory of tuna can be substantially reduced during the campaign, which will be directed toward both institutional and home-consumer markets.

The Fish & Wildlife Service will aid the industry's promotional efforts through special work with schools, institutions, and food trade groups. In addition, informational and educational activities will be increased so as to attract greater consumer attention. The Service will also work closely with the Department of Agriculture in this campaign.

A similar industry-Government marketing program for frozen haddock fillets early this year produced exceptionally good results in relieving burdensome inventories.

In early January, the cold-storage haddock stocks in Boston amounted to 7,117,000 pounds, in contrast to the more normal holdings of 3,912,000 pounds on the same date in 1954. By March 30 they had decreased to 4,021,000 pounds, although fresh landings during this period were heavy. This represented a net outmovement of 3,096,000 pounds as compared to 415,000 pounds during the same period in 1954.

With several industry-sponsored promotional programs in operation, it is evident that fisheries are becoming increasingly cognizant of the value of advertising and publicity.

Among the programs are those of the salmon packers, who have been well pleased with the results of their public relations and publicity work; and the Maine sardine industry, which has expanded its advertising-merchandising campaign. Increased sales of Pacific oysters have resulted from a public relations, publicity, merchandising and marketing program developed by the Pacific Coast Oyster Growers Association.

The "Scallop Story," a recently undertaken advertising program of the New Bedford, Mass., scallop industry, has shown remarkable results. Before the campaign started, there were 5 million pounds of surplus scallops in the freezers and the average price paid to fishermen was only 38¢ per pound. After advertising of scallops was underway, the freezer holdings dropped to 1½ million pounds and the price moved up to 64¢ a pound.

In commenting on its advertising and publicity campaign, the Shrimp Association of the Americas aptly stated: "The publicizing of shrimp as a product will go a long way toward securing the stability desired by the industry. The obtaining of enough users of shrimp to keep the product moving in quantity through regular market channels is the first step necessary toward gaining such stability."

It is readily apparent that with proper promotional effort, the sales of seafood can be greatly expanded. Every segment of the industry should realize this, and give wholehearted support to any well-planned program that is aimed at increasing the popularity and consumption of seafood products.

Published monthly by Atlantic Fisherman, Inc., Goffstown, New Hampshire

P. G. LAMSON, President — GARDNER LAMSON, Publisher and Editor — A. E. BROWN, Managing Editor

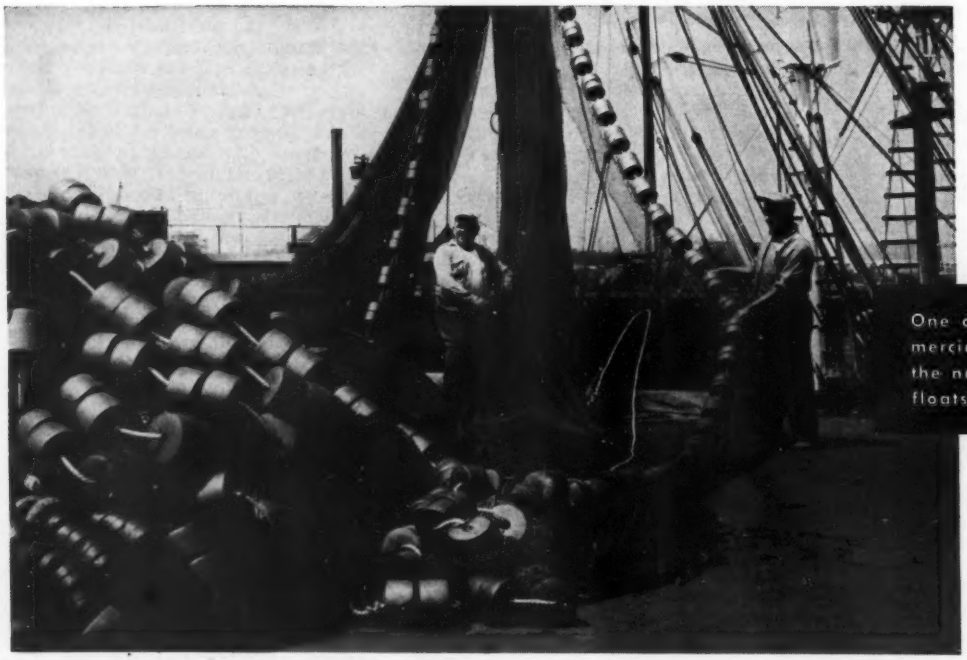
Member: National Business Publications and Business Publications Audit of Circulation

Advertising Representatives: Kennedy Associates, 60 East 42nd Street, New York 17, N. Y. Murray Bothwell, 234 E. Colorado St., Pasadena 1, Cal.; Wm. C. Walters, Box 619, Atlanta 1, Ga.

Permanently buoyant

SPONGEX SEINE FLOATS

outperform and outlast cork!



One of the many commercial rigs now using the new Spongex seine floats.

The Spongex float is the modern float—for the modern fishing operation.

This new plastic float is lighter, tougher and more buoyant than cork. Since it won't absorb water, oil or gasoline, there's no drying problem. Its smooth surface resists sea growths and prevents net and line fouling. Replacements are at a minimum, since the Spongex float will not rot, crumble or shatter.

Join the growing number of fishermen now taking advantage of the new Spongex seine floats. Check with your supplier or write B. F. Goodrich Sponge Products Division, 143 Derby Place, Shelton, Connecticut.

SPONGEX
SEINE FLOATS
by
B.F. Goodrich
Sponge Products Division

HERE'S HOW TO CHOOSE THE RIGHT ENGINE FOR YOUR BOAT:

FIRST: *Get the most dependable power.* An engine laid up robs you of earning power, puts your crew out of work and is costly to repair. Among the waterfront men who know, CAT® Diesel Marine Engines are rated No. 1 for dependability. Ask them!

STEP 2: *Get an honestly rated engine.* You can take more than 200 HP out of certain automobile engines, yet this same engine would last only a few hours at full throttle on your boat. The same applies to souped-up "marine" engines. This is what we mean by *honest* rating! H. O. Penn-Caterpillar Engines are conservatively rated.

STEP 3: *Pick the engine known for fuel savings.* In this area there's just one engine that fits that description: A Cat! Burns low cost No. 2 fuel efficiently.

STEP 4: *Look to the dealer behind the engine.* H. O. Penn marine power specialists will counsel with you to select the right engine you need, and we back your engine with genuine Cat parts and factory-trained servicemen. We've the power you need to match your hull. 11 HP sizes from 82 to 520 HP. See us today!

CATERPILLAR® MARINE POWER

H. O. PENN MACHINERY CO.
INCORPORATED
140th St. & East River, New York, N. Y.
1561 Stewart Ave., Westbury, L. I.
Dutchess Turnpike, Poughkeepsie, N. Y.
136 Day St., Newington, Conn.
Route 17, Tuxedo Park, N. Y.

PERKINS-MILTON CO.
376 Dorchester Ave.
Boston, Mass.

•

4 Water Street
Fairhaven, Mass.

FISHERY PROGRESS

Economic • Legislative • Technical

Four new market development offices for field promotion of fishery products by Fish and Wildlife Service under Saltonstall-Kennedy Act have been opened recently. These offices are located in Seattle, Wash., San Pedro, Calif., New Orleans, La., and College Park, Md. Each office is headed by a fishery marketing specialist, as follows: Seattle, Roy Stevens; San Pedro, S. Ross Hatton; New Orleans, Michael Weissman; and College Park, Hall P. Mefford.

The Seattle office will supervise work done in States of Washington, Oregon, and Idaho. Work in California, Nevada, Utah, and Arizona will be directed from San Pedro office. The New Orleans office will have charge of a working area composed of Louisiana, Mississippi, Alabama, Kentucky, and Tennessee. From College Park the work in Maryland, Virginia, West Virginia, Delaware, Pennsylvania, and New Jersey will be supervised.

The new offices will work to develop fishery product markets through close contact with: school-lunch programs; locker-plant operators; private and public institutions; restaurants; hotels; and press, radio, and television food editors.

Saltonstall-Kennedy Act, which makes funds available for this work, provides that an amount equal to 30 percent of duties collected under customs laws on fishery products shall be transferred annually for three years from Department of Agriculture to Department of Interior. Expenditures for any one year may not exceed $3,000,000.

Newly-designed outboard-powered boat of 26' in length was to be used when oyster sequence of "Outboard Motor" motion picture, produced by U. S. Fish and Wildlife Service in cooperation with Evinrude and Johnson, Division of the Outboard Marine and Manufacturing Co., was filmed at Menchville, Va. This boat has possibilities not only for oystering, but for many other types of commercial fishing.

Powered by a 25 hp. outboard motor, the craft will travel about 16 miles an hour, unloaded. The outboard motor is located in a well in the stern, and a small house forward provides shelter in bad weather. With an 8-foot beam, the boat has large carrying capacity.

The new craft was an outgrowth of research conducted during the course of producing a fishery educational motion picture, and its cost was underwritten by the manufacturer of outboard motors. The new craft also will be used for the crab sequence of the same motion picture to be filmed at Crisfield, Maryland. After the filming, the boat will engage in various typical commercial fishing operations.

The builder says that the newly-designed craft, including the 25 hp. outboard motor, can be purchased for approximately $1,500.

Large gain in fillet imports occurred during March, when shipments totalled 13.7 million pounds, compared with 7.7 million imported during March of last year. This represented an increase of 78 percent. Imports of blocks and slabs of groundfish, including ocean perch, are included in these figures.

The gain was due to heavier imports from Canada, Iceland, and Denmark. Canada again led all other exporting countries with 8.3 million pounds, followed by Iceland with nearly 4.0 million and Denmark with 1.0 million. The balance came from Norway, United Kingdom, Netherlands, West Germany, Scotland, and St. Pierre.

Total fillet imports into the United States during the three-month period ending with March amounted to 35.2 million pounds, compared with 29.2 million during the corresponding period of last year—an increase of 21 percent.

Canned fish and by-products registered healthy advances in both volume and value in 1954, according to the Fish and Wildlife Service. The pack of canned fishery products, processed in 400 plants in 25 States and in Alaska, American Samoa, Hawaii, and Puerto Rico, amounted to 867,986,000 pounds and was valued at $331,027,000 to the packers. This was an increase of 10 percent in volume and eight percent in value compared with the previous year. Fishery by-products in 1954 were valued at $81,571,000, a gain of 10 percent over 1953.

The 1954 increase in production of canned items can be attributed to heavier packs of tuna, Maine and Pacific sardines, salmon, and fish packed for pet food. The pack of tuna and tunalike fishes exceeded that of any other item in both volume and value, and amounted to 10,889,000 standard cases, valued at $142,149,000. Compared with 1953, this was an increase of 1,309,000 standard cases in volume, and $15,891,000 in value. The tuna pack was worth 54 percent more than that of salmon, which ranked second in value. Tuna was packed in seven States, Hawaii, Puerto Rico, and, for the first year, in American Samoa.

The pack of canned salmon in 1954 amounted to 4,163,000 standard cases, worth $92,281,000 to the canners—an increase of six percent in volume and 11 percent in value compared with 1953. The largest pack of sockeye salmon in the Puget Sound area since 1913, and an unusually large pack of chum salmon in southeastern Alaska, were responsible for the gain.

Pacific sardines returned to Southern California waters in 1954 after an almost complete absence during 1952 and 1953. The catch of 133 million pounds was used to produce a pack of 1,333,000 standard cases, compared with less than 64,000 cases in 1953. Had there been a market for additional supplies of canned sardines, it is estimated that the pack could have been doubled.

The pack of Maine sardines amounted to 2,935,000 standard cases, worth $18,153,000 to the packers. Compared with the previous year, this represented an increase of five percent in volume and seven percent in value.

In the by-products field, a new record was attained through the production of 256,915 tons of fish meal, worth $32,748,000. This was nearly 18,000 tons more than in 1953 and 13,000 tons above the previous 1936 record production.

The production of marine animal oils in the United States and Alaska during 1954 totalled 22,144,000 gallons, valued at $13,136,000 to the producers. This was an increase of nine percent in volume compared with 1953, but was only 55 percent of the record 1936 production.

Senate wage-hour legislation includes a bill sponsored by Senator Murray of Montana, which would remove the seafood and agricultural exemptions in the Fair Labor Standards Act. In an analysis of his bill, Senator Murray had this to say regarding agricultural and seafood processing:

"The present law contains a maze of partial and complete exemptions for various types of agricultural and seafood processing. These exemptions were written into the law through the influence of the special interest groups who have benefited by them. They should be swept away so that workers in these industries, including the seasonal employees, would be given the protection of the law."

The fishing business will strive to retain its exemption, and representatives of the industry were expected to testify at hearings to be held during April.

Ecuador has fined the freezer ship *Arctic Maid* $43,481, and the purse seiner *Santa Anna* $5,881, for violation of its 200-mile maritime zone. Three representatives of the Department of State appeared before House Committee on Foreign Affairs and Senate Committee on Foreign Relations April 14 to report on the seizures.

The boats were taken into custody by an Ecuadoran patrol vessel on the high seas approximately 24 and 14 miles, respectively, due West of Santa Clara Island on March 27. An American crewman was seriously wounded by rifle fire of an Ecuadoran seaman during the arrest of the *Arctic Maid*.

Log of the "LADY LUCK" . . . A True Story

Time: 0530 The "Lady Luck" leaves for shrimp grounds off Sabine Pass. Winds from southeast with strong tide. Snow-Nabstedt gear purring like a kitten.

Time: 0700 Try net shows good indication of shrimp at three fathom level. Large trawl and boards put overboard. Vessel ready for trawling.

Time: 0720 Trawler's automatic pilot set for southerly direction against tide. Engine operating at 1300 rpm. Snow-Nabstedt gear running efficiently, maintaining trawling speed despite strong sea.

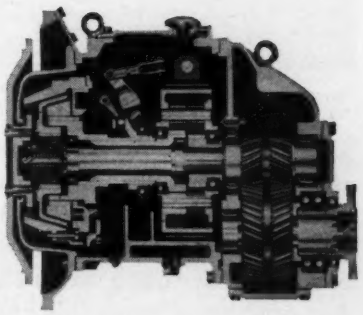
Time: 1100 Trawl is pulled aboard. Four barrels of large white shrimp are secured in the hold. A mighty good catch!

Thanks to SNOW-NABSTEDT GEARS

"I'm very satisfied with the operation of my Snow-Nabstedt reverse and reduction gears," says Ernest "Pete" Petterson of Port Arthur, Texas, captain and owner of the 42-foot shrimp trawler "Lady Luck". "They offer long service without troublesome and costly breakdowns".

. . . the shrimp trawler *"Lady Luck"*, powered by a 110 H.P. Diesel coupled with a S-N Manually operated 2:1 Reduction Gear, has completed a highly profitable trip.

Fishing men the world over will tell you that you can't beat S-N Marine Gears for rugged construction, smooth power transmission and economical operation . . . thanks to S-N's exclusive herringbone gearing, wet type cone clutch and balanced reverse gear train.



S-N Marine Gears are designed specifically for Marine Engines 4 to 1000 H.P. with a wide range of reduction gear ratios.

SNOW-NABSTEDT

Transmission Engineers

FOR NEARLY HALF A CENTURY

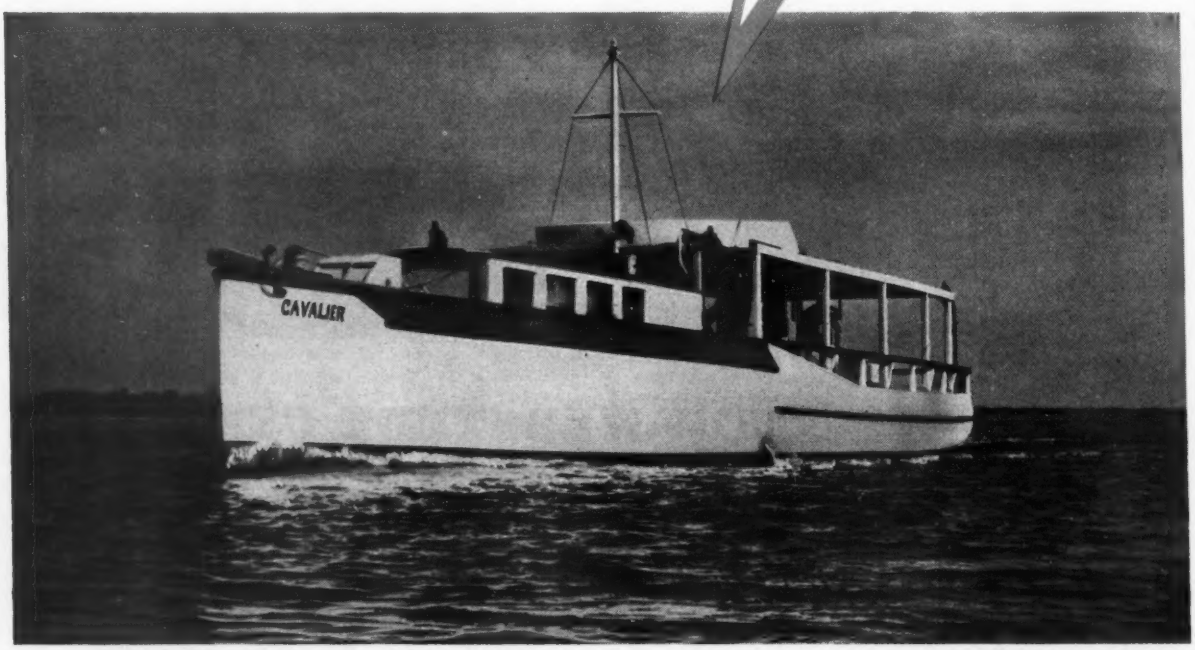
"MAKERS OF JOE'S GEARS"

THE SNOW-NABSTEDT GEAR CORP., HAMDEN, CONN.

S-N MANUAL HYDRAULIC AIR-OPERATED GEARS

"My engine stays clean,
my maintenance costs are low,
with **GULFLUBE MOTOR OIL H.D.**"

. . . says Mr. N. O. Cook of Carrabelle, Florida



"I'm certainly sold on Gulflube Motor Oil H.D.," says Mr. Cook. "An oil has to be good to keep the pistons and bearings as clean as Gulflube H.D. does in the engine of my 'Cavalier'."

Keep the engine of your boat clean and at top performance by using the quality paraffin base oil that combines a tough lubricating film with the right level of detergency—Gulflube Motor Oil H.D.

And to insure top engine dependability and safety at sea, use Gulf Dieselect Fuel. It's delivered to you refinery clean through the Micronic Filters of your Gulf Marine Dealer's pumps. Just another advantage of doing business with your friendly Gulf Dealer.

The finest petroleum products for every need

GULF OIL CORPORATION • GULF REFINING COMPANY

1822 GULF BUILDING, PITTSBURGH 30, PA.

GULF

MEMBER

Pump and Electricity Tried for Catching Bait

*Experiments aboard exploratory vessel "John N. Cobb" in catching Pacific Coast herring described by Keith A. Smith**

FISHING gear consisting of underwater lights, electrodes and suction pumps has been tested in the Pacific Northwest by the Fish & Wildlife Service's exploratory vessel *John N. Cobb* in an effort to find a new way to catch bait fish. The idea is that small fish will be attracted by the underseas lights, swept toward the pumps by electrical impulses, and pumped aboard and into the bait tank through a long hose.

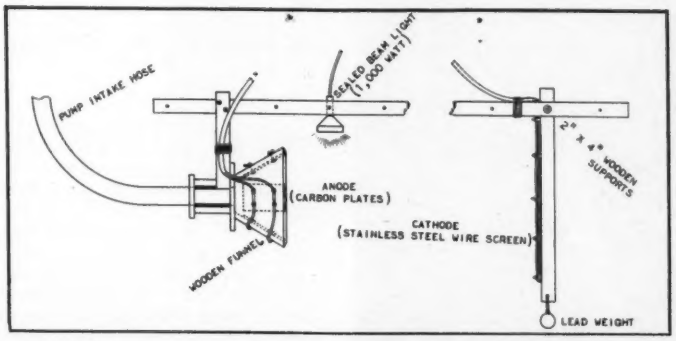


Figure 1—Diagram of pump intake hose, underwater light and electrodes used by Fish & Wildlife Service research vessel "John N. Cobb" in experimental catching of bait fish.

In experiments conducted during October and November 1954, small herring were caught at a maximum average of 1,178 fish a minute, or 70,720 an hour—provided seas were calm, and nothing occurred to frighten the fish away. An underwater light of 1000 watts was used to attract fish to the pump intake, in combination with the electrical-guiding device and automatic light dimmer.

Before the above method can be applied to catching fish on a commercial basis, more experimental work is required. The use of monochromatic lights to attract and guide fish to a point of capture might be tried. Experiments with various colors of light might lead to the discovery of a wave length that is much more effective than is white light.

The use of sound for fish attraction also presents a field for investigation. Sounds of the proper controlled frequency and intensity applied under water may result in the attraction of certain fish.

Knowledge is needed of the pattern of electrical current flow through an unlimited space of sea water, the amount of current per square inch necessary to guide fish of various sizes in sea water, and the optimum size and shape of, and distance between electrodes.

Gear Put into Water at Nightfall

During the 1954 experiments with the fish attracting, guiding, and pumping gear, the *John N. Cobb* made 29 tests in Puget Sound and off Cape Flattery. The tests in Puget Sound were made in areas in which schools of fish were indicated by feeding birds and by tracings of an echo sounder. The tests off Cape Flattery were set "blind" in outside waters on Swiftsure Bank and in Mukkaw Bay.

The gear was put into the water at nightfall; the underwater light was turned on; and a watch was kept to observe any fish that rose to the light. The assembly was suspended in the water by a single cable from the boom at a depth of 5 to 15 feet, the whole apparatus lying in a horizontal position parallel to the axis of the boat. When the assembly was suspended at this depth, the reactions of the fish in the lighted space could be observed from the after deck if the surface of the water was relatively calm.

When a school of fish began to enter the field of light, the pump was started, and the electric pulse was turned on. Fish present between the electrodes within approximately 2 feet of the anode turned involuntarily and swam toward the anode. As these fish approached to within 2 or 3 inches of the open end of the funnel, they became stunned by electrical shock and were carried into the funnel by the flow of water. Fish continuing to rise to the light were caught in the electrical field and led to the anode in this manner. Under ideal conditions of tide, wind, and availability of small herring, the fish rose up to the light and into the pump in a continuous stream.

At such ideal times, small 3-inch herring were caught at a maximum rate of 1,178 fish per minute or 70,720 per hour. The average rate of catch for the five best catches made on four different nights was 717 fish per minute or 42,022 fish per hour. Catches ranged from these values down to 0, the better catches always being made between 4 a.m. and 6 a.m. during the approach of daylight.

The fish caught were predominately herring and, with the exception of 14 fish ranging from 6 to 8.7 inches in length, were all of a uniformly-small size. They averaged 3.05 inches in length and were in their first year of life as determined by scale analysis. Individual larger herring 6 to 7 inches in length were occasionally seen at the periphery of the lighted space at a distance of approximately 12 feet from the light. Only very rarely was a fish of this size caught.

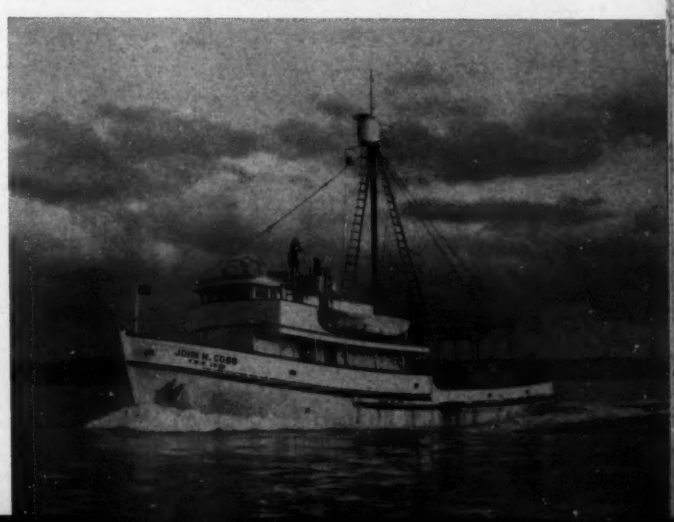
The better catches were almost invariably made when both the light and electric pulse were in operation. In one test, however, 26.5 pounds of herring were caught in 20 minutes using only the light. Small numbers of anchovies and eulachon were caught along with the herring.

Dimming of Light

Gradual dimming of the light was tried in hope that the fish, particularly the larger ones, would rise nearer to the light. Such a reaction was not observed, however, during the tests conducted. The herring seemed best attracted

(Continued on page 34)

The 93' "John N. Cobb", which was equipped by the Fish & Wildlife Service with suction pump, electrodes and underwater light for catching bait fish.



* Fishery Methods and Equipment Specialist of the U. S. Fish & Wildlife Service, Seattle, Wash.

Need for Quality Products Stressed at Convention

Emmett M. Concannon of Chicago, outgoing president of the National Fisheries Institute, looks on as president-elect Francis W. Taylor of Pensacola, Fla., accepts the post.

Growing demand for ready-to-cook foods offers tremendous opportunity for fishing industry, say speakers in New Orleans at tenth annual get-together of National Fisheries Institute

FISHERMEN will be called upon to furnish the nation's major supply of uncontaminated food in case of an atomic or bacteriological attack, members of the National Fisheries Institute were told April 25 by Orme Lewis, Assistant Secretary of the Interior. Lewis spoke at the opening general session of the NFI convention at the Roosevelt Hotel in New Orleans, La. About 700 representatives of the North American fishing industry attended the 10th annual meeting, held April 24-27.

"We know abundant food, deep in the ocean, would be safe from such an attack," Lewis continued. "Exploration now underway will tell us more about these resources and the kinds of equipment you will need to harvest them."

Fisheries exploration by the Fish & Wildlife Service originally was undertaken to locate new food sources which will be needed as the country's population expands, Lewis said. But the project has acquired new importance in view of the necessity of locating vast food supplies that would be free of contamination in case of atomic warfare.

A general theme stressed throughout the four-day convention was the need for quality products if seafoods are to take their rightful part of the consumer's food dollar. In fresh fish as well as prepared products, speakers were agreed that quality, rather than price, should be emphasized. It was pointed out that better quality seafoods at a relative higher price would sell more easily than inferior products. Members of the Fisheries Institute were called upon to practice their own quality control for the betterment of the whole industry.

Sol Fass of the Isaac Fass Co., Portsmouth, Va., headed a discussion on fresh fish problems at the first general session. He said: "Quality is most important in the fresh fish market. We in the producing game must realize we cannot stay in the fresh fish business unless boats put to the docks fish that are fresh and salable."

Fass advocated that every buyer refuse to accept any catch that is not of top quality. He said the buyer, may as a result, lose the boat. But if all buyers turn such catches down the policy will result in greater care in handling from the time the fish comes out of the water.

New Officers

In other action the organization elected Francis W. Taylor, Warren Fish Co., Inc., Pensacola, Fla., president; and named Frank J. Girse of Meletio Seafood Co., St. Louis, Mo., a veteran of 45 years in the fish distribution business, as the NFI Man of the Year. Taylor replaces Emmet M. Concannon, W. M. Walker, Inc., Chicago, Ill., as the Institute's president.

In addition to Taylor, other officers elected include: Jack Meletio, Meletio Seafood Co., St. Louis, Mo., secretary; and Lloyd Turnacliff, Meredith Fish Co., Sacramento, Calif., treasurer. Vice-presidents for the coming year are: Region 1—Barney Finn, O'Donnell-Usen Corp., Boston, Mass.; Region 2—Walter Lehman, Allen Kirkpatrick Co., Rehoboth, Del.; Region 3—Jack T. Styron, Louisiana Menhaden Co., New Orleans, La.; Region 4—Albert D. Levy, Washington Fish & Oyster Co., San Francisco, Calif.; Region 5—W. B. Hall, Booth Fisheries Corp., Seattle, Wash.; and Region 6—Ralph E. Carr, Mid-Central Fish Co., Kansas City, Mo.

NFI's new Executive Committee includes L. Vernon Drape, Ell Vee Dee, Inc., Fall River, Mass.; Raymond Lee

These are the men who will run the National Fisheries Institute for the coming year. Seated from the left: Jack Meletio, St. Louis, Mo., secretary; Emmett M. Concannon, chairman of the board; Francis W. Taylor, president; and Lloyd Turnacliff, Sacramento, Calif., treasurer. Standing, from left to right: Jack T. Styron, New Orleans, La., vice-president Region 3; Albert D. Levy, San Francisco, vice-president Region 4; Ralph E. Carr, Kansas City, Mo., vice-president Region 6; and Charles E. Jackson, NFI's general manager.

Haynie, Jr., Reedville Oil & Guano Co., Inc., Reedville, Va.; John Santos Carinhas, Jr., John Santos Shrimp Co., Brownsville, Texas; Emanuel Stein, Stein Fish Co., Pueblo, Colo.; E. A. Ruthford, San Juan Fishing & Packing Co., Seattle, Wash. The Executive Committee member from Region 6 has not been elected as yet.

SPEAKERS' TABLE AT OPENING SESSION—Left to right: James Sinclair, Canadian Minister of Fisheries; Robert F. Kennon, Governor of Louisiana; Emmett M. Concannon, retiring president of the National Fisheries Institute; and Orme Lewis, Assistant Secretary of the Interior.

Predicts Increase in Fish Consumption

An increase in consumption of seafoods was forecast by Assistant Secretary of Interior Lewis in his opening remarks. He noted that fish production as well as consumption showed a gain last year. Lewis said these facts are only forerunners of a far greater expansion which the fishing industry can achieve in the not too distant future.

The industry, Lewis declared, never has approached realization of its marketing potential. "Now," he continued, "we are entering an era in which that goal can and will be reached . . . For the first time in the long history of this industry, one of the oldest in America, the commercial fisheries now have a co-ordinated research and development program of sufficient strength to pioneer and develop the markets of tomorrow."

James Sinclair, Canadian Minister of Fisheries, was another first-session speaker, along with Lewis and Louisiana Governor Robert F. Kennon. Sinclair said he has been a "little worried by press reports of new quotas and tariffs for Canadian fish, coming into this country. "I sincerely hope we will continue our past record of co-operation in the trade of our fishing products," Sinclair stated.

"I know that the argument can be made," he continued, "to protect high-wage American industries against the competition of low-wage foreign countries. But even if this argument is valid, it surely does not apply to the Canadian fishing industry."

Good Demand for Shrimp

Harry F. Sahlman of Sahlman Seafoods, Tampa, Fla., president of the Shrimp Association of the Americas which held a meeting in conjunction with NFI reported that domestic shrimp production reached an all-time high in 1954 but that demand kept pace with the increase.

Sahlman said that domestic shrimp landings last year totaled 147 million pounds, after heads had been removed. Virtually all the catch was marketed plus an additional 41.5 million pounds of imported heads-off shrimp. During January and February of this year, Sahlman reported, apparent consumption of shrimp was more than 21 million pounds, as compared with less than 14 million pounds consumed during the same two months last year.

Backing up the report, J. Roy Duggan, president of the SeaPak Corporation, St. Simons Island, Ga., said the current demand for breaded shrimp is the greatest he ever has experienced. Duggan feels the public demand for convenience—ready to cook—quality foods helped spur the unprecedented demand for breaded shrimp.

Shelly A. Key, a Port Lavaca, Texas, producer and processor, pointed out that production at Texas shrimp ports last year was the greatest in the history of the State. Agreeing that consumption kept pace with production last year, he predicted demand probably would increase this year.

"The shrimp industry is constantly striving to further increase the types of convenience foods available," he said. "We know the American housewife will continue to buy prepared, high quality and tasteful foods."

Improvements in Handling of Fish

New and better ways of handling fish and shellfish are making these products more attractive as convenience foods to the American people, Francis W. Taylor declared on his election as NFI president. "The housewife can look to fish products as a convenience food, just as she does with other new food products," Mr. Taylor said. "Research has played an important part in improving the handling, processing and distributing of our products, and the work of developing still better methods is going forward rapidly.

"The phenomenal acceptance of fish sticks is but one example of this," he pointed out. As another example of

Caught in one of the many informal chats during the NFI meeting are, from left to right: Frank Holas, Rex Gage, and R. G. Kentner, all of Booth Fisheries Corp., Chicago; and Virgil Versaggi, Versaggi Shrimp Co., Brownsville, Tex. At an automatic breading-frying machine in the exhibition hall are L. G. Moore, Moore Seafoods, Biloxi, Miss. (left) and Sydney Herndon, Herndon Marine Products, Inc., Corpus Christi, Tex.

MERCHANDISING PANEL at National Fisheries Institute's tenth annual convention. From left to right: Harry A. Trimm, New York; William C. Eardley, Jr., Seattle; R. J. Gruber, Cleveland; Rex Gage, Chicago; Gil Kuhn, San Diego, Calif.; Edward J. Piszek, Philadelphia, Pa.

this trend, Mr. Taylor disclosed that his own firm, the Warren Fish Co. of Pensacola, Fla., is now working on a new process of using salt ice to refrigerate fish at the point of catch. This process consists of preserving the fish in ice made of 3 percent salt water.

Mr. Taylor pointed to the continuing increased consumption of fish and shellfish products in the United States as an indication of the growing acceptance of these items for every-day use in the American home. Americans consumed an additional third of a pound of fish in 1954 over 1953, he said, bringing the average to 11.1 pounds per capita. The education of young people to like fish and eat it frequently has been one of the outstanding aspects of fish consumption in recent years, Mr. Taylor said, attributing much credit for this to the use of fish products in the school lunch program.

Mr. Taylor asserted that one of the greatest problems of the industry is to devise better methods of insuring freshness of fish products between catching and processing. To do this requires flash-freezing, Mr. Taylor said. He believes the new 3 percent salt ice method of refrigeration is the best process yet devised insofar as fresh fish products are concerned.

In Mr. Taylor's opinion, quality products, research and aggressive promotion of fish are the three elements which will insure greater success of the industry.

Shown examining a new type shrimp net at the exhibit of The Linen Thread Co., Inc. are, standing from left to right: Fred Goldstein, Liberty Fish Co., Philadelphia, Pa., and A. J. Ruppel, Booth Fisheries of Mexico; kneeling, G. C. Lewis; and seated, Louis Frank of Mexico.

Ready-to-Cook Products

The leaps-and-bounds growth of the demand for convenience foods—prepared, ready-to-cook products the housewife need only pop in the oven for a few minutes before dinner time—offers a tremendous opportunity for the fishing industry, delegates to the convention were told. However, speakers at a panel session on merchandising techniques warned that emphasis should constantly be placed on quality, rather than on price.

General consensus was that the American housewife—who wants to buy the food products that will save her time and cooking trouble—is, nevertheless, still interested in obtaining tasteful food of a consistently high quality.

Mr. Duggan of the SeaPak Corporation, who was moderator of the "Operation Merchandising" panel, pointed to the tremendous increase in consumption of breaded, ready-to-cook fish sticks as proof that fish products need not be sold as a low-cost item. "High quality, plus a fair price structure, has accounted for the consumption of approximately 50 million pounds of fish sticks last year—the first full year of production," he said.

Mr. Duggan pointed out the tremendous market potential in fish sticks, referring to the fact that consumer surveys have shown only about 30 percent of American families have tried fish sticks. He said fish stick producers and distributors should work together to develop this untapped market, rather than competing for the relatively small 30 percent-of-families market.

Harry A. Trimm, Jr., fisheries product manager for Birds Eye, commented: "Too often, intensive competition based on price alone results in downgrading of quality. When this happens, the consumers quickly learn to leave the down-graded product strictly alone, and all other brands suffer, too."

Rex Gage of Booth Fisheries, Chicago, said today's merchandising opportunities call for men of imagination—and men who will back revolutionary ideas by putting them on the market, or testing them in some other objective way. "If we . . . will actually spend a small portion of our income in improving and developing products," he predicted, "I am certain we can obtain results that will, in the end, more than offset the expenditures made." Mr. Gage continued: "New products are the life-blood of any growing industry, and certainly the fishing industry is growing today."

Edward J. Piszek, president of Mrs. Paul's Kitchens, Philadelphia, Penna., agreed that a constant search for new products is healthy for the industry, and suggested that cost savings from improved efficiency and other production and marketing techniques be used for product development and research.

(Continued on opposite page)

By-Products Session

In remarks to a by-products general session on the convention's second day, Orme Lewis stated that the Secretary of the Interior has $3 million a year to spend for fishing research over a three-year period. "This money will be used for research and the practical application of research findings in places where they can promote the free flow of domestically-produced fishery products in commerce," he said.

Lewis pointed out as an example menhaden, which account for a large percentage of commercial fish production. Although these fish are valuable, he said, very little is known about their habits. The convention-goers were told that the by-products of fish of all kinds should be tested for more extensive use in manufacturing modern products.

New chairman of the By-Products Executive Committee for the coming year is H. R. Humphreys, Jr., Standard Products Co., White Stone, Va.; while vice chairman is Harvey W. Smith, The Fish Meal Co., Beaufort, N. C.; and secretary is C. W. Whitmoyer, Whitmoyer Laboratories, Inc., Myerstown, Pa.

The other members of the By-Products Executive Committee include Thos. A. Barber, J. Howard Smith Co., Port Monmouth, N. J.; Herbert Porch, Eastern Marine Products Co., Eastport, Maine; Raymond Lee Haynie, Jr., Reedville Oil & Guano Co., Reedville, Va.; George R. Wallace, Wallace Fisheries Co., Morehead City, N. C.; Jack T. Styron, Louisiana Menhaden Co., New Orleans, La.; Arthur W. Wilde, Alaska Reduction, Inc., Seattle, Wash.; and Sidney L. Feener, Jr., Birds Eye Division, General Foods Corp., Woburn, Mass.

Eight Resolutions Adopted

Resolutions adopted during the closing sessions by members of NFI, included the following:

1. Favored the establishment of a weather ship in the Gulf of Mexico to minimize recurrence of the average of more than $5 million annual damage to vessels and land installations by weather conditions.
2. Opposed an increase in the minimum wage law and favored retention of the present minimum.
3. Opposed construction of dams on salmon streams and the issuance of preliminary permits by the Federal Power Commission unless such action is vital to national defense.
4. Urged senatorial ratification of the Great Lakes fisheries convention, under which the lamprey problem would be studied.
5. Opposed International Labor Organization efforts to cover working conditions of American boats and fishermen, saying that employment on U. S. fishing vessels is a matter of domestic concern only and that the proper place for improvement of working conditions on U. S. vessels is at the collective bargaining table.
6. Opposed any and all efforts to revocate the statutory right of the Secretary of Agriculture to intervene in behalf of the fishing industry before governmental regulatory agencies such as the Interstate Commerce Commission.
7. Agreed to establish a fisheries speakers bureau.
8. Opposed efforts to regulate the duration of leases or the amount and compensation paid in regard to motor truck vehicles.

Chairman of the General Committee for the National Fisheries Institute convention was A. B. Chauvin.

Discussions, shoptalk and gossip went on during informal luncheons, too. Shown at the blue crabmeat committee luncheon are from left: H. Newton Smith, Riverside Seafoods, Inc., Berwick, La.; John R. Shaw, South Atlantic Crab Co., Jacksonville, Fla.; and W. B. Lewis, Lewis Crab Factory, Brunswick, Ga.

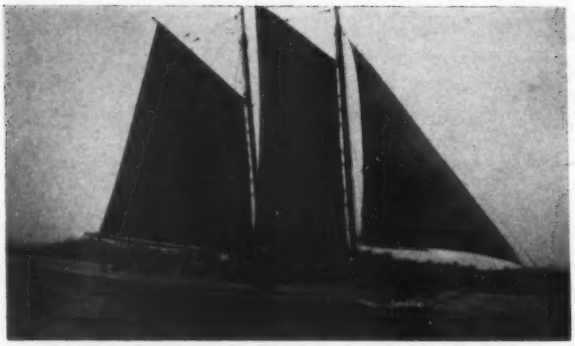
Canadians Experimenting with Mid-Water Trawl for Herring

The first phase of the mid-water trawl experiments which are being conducted by the Fisheries Research Board of Canada at the Pacific Biological Station was completed recently. W. E. Barraclough, who has been supervising the work, reported fairly successful preliminary results. The experiments were conducted during a five-week period aboard the chartered vessel *Sea Pride II*, whose skipper is Norman Sigmund.

The net used in the tests was constructed almost entirely of nylon twine and rope, and has a working gape of 35 by 35 feet. The otter boards for holding the net are of a novel design and are suspended quite differently from those of conventional gear.

The mid-water trawling gear was found to be very effective at night, and numerous catches of 10 to 35 tons of herring were made in 15- to 20-minute drags on schools of herring located entirely off the bottom, at depths from 15 to 35 fathoms. Catches in daylight were much lighter (average 1 to 2 tons).

MEMBERS OF NFI MERCHANDISING PANEL, including from left to right: Ralph Carr, Kansas City, Mo.; Stanley Remus, Chicago; Lee Greene, Cincinnati, Ohio; W. Jackson Catt, Buffalo, N. Y.; R. M. Sloan, Los Angeles; Lionel Shatz, San Francisco.



TWO-MASTED SCHOONER "ANNA AND HELEN", owned by Capt. Howard Gambrill of Edgewater, Md. This 57' craft and the "Mattie Dean" are claimed to be the only two-masted schooners in the workboat line left on the Chesapeake Bay. The "Anna and Helen" is engaged in the oyster business in the Winter, takes out charter parties during the Summer.

Virginia Laboratory Studying Blue Crab Spawning Habits

Scientists at the Virginia Fisheries Laboratory at Gloucester Point are undertaking a study which may lead to a better understanding of the egg-producing habits of the blue crab. The blue crab fishery usually yields an income of better than two million dollars to Virginia.

William B. Smith, a graduate student at the Laboratory under the direction of William A. Van Engel, biologist in charge of crab research, is starting some experiments to throw light on the spawning habits of crabs. The questions he hopes to answer are these: How long after mating will a crab spawn? How many times will a female crab spawn and will she spawn twice a year? Will crabs that spawned last year spawn again this year; one or more times? Will immature female crabs, when held separate from males, still produce an egg mass of infertile eggs?

Several large holding pens are being built and one already has been placed in the York River. Crabs will be held in the pens for the rest of the year.

Pound Fishing Fair

Pound fishing in Tangier waters still remains fair. Both Capt. Wyatt Pruitt and Smith Parks were making from $75 to $160 a day catching shad, bait fish for crab potters and black drums.

Crab Season Opens

The season for the catching and shedding of peeler crabs opened on the 25th of April. On this day seven crab-packing houses raised their white flags for business and 40 scrapers sailed for the crabbing grounds on the Eastern Shore of Virginia. The average catch for the first day was about 300 peelers, and the largest catch was some 900, which the crabbers sold for two cents apiece.

Cod Harbor Oyster Farmers Still Harvesting

The oyster season is over, but the oyster farmers in Cod Harbor are still working on their oyster farms there. W. L. Haynie took up over 800 bushels of oysters at prices ranging from $2.75 to $3.00 a bushel.

Hampton Roads Area Landings

During the month of April fish production in the Hampton Roads area amounted to 3,839,800 lbs., which was 762,400 lbs. less than during March. Scup led with landings of 2,644,300 lbs., and sea bass was second with 639-900 lbs.

Pound net landings for April were 401,900, with shad leading with 298,800 lbs.

Maryland Expects Increase in Season's Oyster Production

Maryland's oyster season ended on April 15, with officials hopeful that final figures will prove their belief that this year's production will exceed last year's by at least 20 per cent. Actually the dredging season ended a month previous, but the tongers, who take about 80 per cent of the crop, didn't quit until the 15th.

If estimates hold true, the dredgers and tongers took more than 3,000,000 bushels from Maryland waters since the season opened on September 1. Many of the watermen will now switch to crabbing, which became legal in Maryland waters April 1.

Only in Worcester County will oystermen be able to work. The season there is year around.

Would Restrict Soft Clam Dredgers

A bill by Sen. Phoebus to prohibit the taking of soft shell clams from the waters of Somerset or St. Mary's County by hydraulic or mechanical dredge passed the Senate last month. It was said that mechanical or hydraulic dredges might disturb the bottoms.

Wants to Expand Docking Facilities

The Fish Products Co., Inc. of Lewes, Delaware, which berths its ocean trawlers in the Wicomico River during the Winter, wants to expand its docking facilities near Salisbury. An application for a permit to dredge a section of the river three miles from Salisbury and build a new dock has been made.

Plans indicate that a 550-ft. combination dock and bulkhead will be constructed near and generally parallel to the shoreline. Fish Products owns property along the river between White Creek and Sabers Creek.

Would Extend Wicomico County Oyster Season

A bill extending the season for taking oysters from leased grounds in Wicomico County was passed by the Senate last month and sent to the Governor. It sets the season from September 1 to April 15.

Crab Potters Start Spring Operations

Crisfield crab potters reported that their catches late last month were averaging from two to three barrels of crabs a day, with the price being about $10 per 100-lb. barrel.

Crab potting is a young industry in Crisfield, but there is hardly a crabbing bottom in the tidewater area that doesn't have hundreds of pots. The pots are made of chicken wire and baited with fresh fish. The crabs crawl into the pots to feed, then are removed by watermen.

In past years, the method of catching crabs was with scrapes, trotlines and nets. Some are still being used, but the great bulk of hard crabs are caught in pots.

Crab pots are not allowed in the local rivers. They can be put out only in the bay, sound and mouths of the rivers. Each waterman, by law, is allowed 50 pots.

Market Development Office Opened

A new market development office of the Fish & Wildlife Service was opened in College Park, Md. last month, with Hall P. Mefford in charge. Work in Maryland, Virginia, West Virginia, Delaware, Pennsylvania and New Jersey will be supervised from the College Park office.

Bill Would Regulate Net Fishing

A bill bringing the waters between Cove Point lighthouse and Cedar Point lighthouse under the same regulations applying to net fishing in the waters of Chesapeake Bay has been passed by the House. It then went to the Senate.

New Hatteras Trawlers Make Dual Trial Run

Mary K. and Edith M. II Demonstrate Seaworthiness

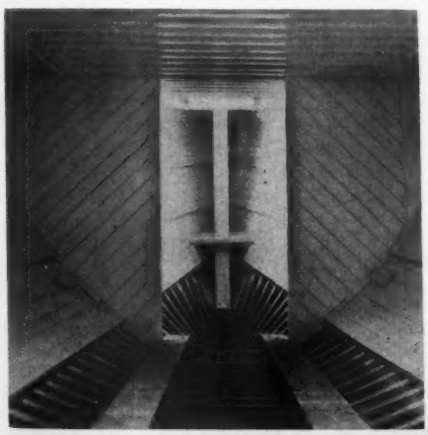
Trial run of new 68' Hatteras Trawlers "Mary K.", owned by J. A. Jones of New Bern, N. C., and "Edith M. II", belonging to Ottis Purifoy of Morehead City. The shrimpers were built by Morehead City (N.C.) Shipbuilding Corp., and are powered with 205 hp. General Motors 6-110 Diesels.

TWO new 68' Hatteras Trawlers, the *Mary K.* and the *Edith M. II*, had a double trial run in April. A few days later the builder, Morehead City (N. C.) Shipbuilding Corporation, delivered each to her new owner. The *Mary K.* went to J. A. Jones of New Bern, N. C., while the *Edith M. II* was delivered to Ottis Purifoy of Morehead City, N. C., one of coastal Carolina's best known commercial fishermen.

It was the first such "duet" Morehead City citizens had seen. As the two trawlers left the shipyard docks and started toward the inlet side by side, men along the docks and in passing boats waved their caps, and some boatmen followed the *Mary K.* and the *Edith M. II* out into the Atlantic Ocean to watch their initial performance. The vessels' seaworthiness in rough water, maneuverability and power and speed were demonstrated.

With two dozen other seagoing craft on order, and with the expanding facilities of the Morehead City Shipbuilding Corp. busier than ever, double deliveries soon may become commonplace. The 68' Hatteras Trawlers are built on one railway under the shed, while the 50 and 55-footers are built on another, which eliminates any delay in delivery. The firm's 50' utility boats for military service, of which there are 18 on order, comprise a separate operation.

(Continued on page 27)



Left: Bow of an almost-completed 68' Hatteras Trawler at the Morehead City (N.C.) Shipbuilding Corp. Right: Cicero S. Hardison, Superintendent of the shipyard, beside the fresh water tank with which Hatteras Trawlers are equipped.

Below, left: One of the two 900-gallon fuel tanks with heavy baffling, carried by the 68' Hatteras Trawlers. Right: Interior of a partially-built 50' Hatteras Trawler, showing the heavy construction and through bolting.

Richard A. Coffin's lobster boat "Rig Enough" operates out of Gurnet Bridge, Maine. She is powered with an Osco "Marined" Ford V-8 engine with Michigan wheel, and uses Plymouth rope and heading twine and Prudden plastic plugs. "Rig Enough" was built by Charles S. Goombs at Sebasco.

Maine Herring Schools Being Studied by Research Vessel

The Fish & Wildlife Service research vessel *Theodore N. Gill* left Boothbay Harbor April 19 on the first of a series of exploratory herring fishing cruises to be made in the Gulf of Maine and adjacent waters. The explorations are being made in an attempt to locate herring schools and to follow them on their migrations inshore as the season progresses.

It is planned to cover the entire Gulf from Cape Cod to Cape Sable. Lift nets will be operated to sample the schools encountered. Plankton tows will be made and continuous water-temperature records kept during the cruise.

The northeastern part of the Gulf will be covered by the Canadian vessel *Harengus*. Results of the two cruises will be integrated to give an indication of distribution of herring schools and the size of the fish that comprise them.

Fence Installed to Protect Clam Flats

Biologists of the Fish & Wildlife Service and the Sea & Shore Fisheries Dept. recently completed construction of anti-green-crab fortifications at Sands Cove on the Medomak.

About 500 ft. of fence, 18 inches high, was installed across the mouth of the cove to enclose the main portion of the clam-producing area. This barricade is expected to keep out green crab predators eager to feast on a good set of seed clams in the area.

Building Dragger for Capt. Wescott

Newbert & Wallace, Thomaston, is building a 62'10" dragger for Capt. Jack Wescott of Point Judith, R. I. The new vessel was lengthened 2'10" over a 60-footer designed earlier by Albert E. Condon for Roy Campbell. Wescott's boat will be powered with a 6-cylinder General Motors 160 hp. Diesel.

Predict Normal Sardine Season

The 1955 Maine sardine packing season officially opened on April 18, but with only a few scattered plants ready to operate, due to the lack of fish. However, a normal season is predicted and the industry expects to produce one of its most marketable packs due to strengthening of State inspection and other quality control laws which will become effective 90 days after the adjournment of the Legislature, or in early August.

Some canners say there is less evidence of herring this year than in many seasons, but this has not occasioned any alarm since important canning rarely starts until some time in May, and sometimes there is no real rush of fish until June.

Maine sardines will be included among other canned food items to be subjected to atomic tests in Nevada this year, to determine their safety for human consumption when exposed to atomic action.

February Seafood Production Shows Gain

Landings of commercially-caught fish and shellfish at Maine ports during February amounted to 6.7 million pounds valued at $683,800 to the fishermen. Compared with the reported catch of 5.5 million pounds worth $645,500 in the corresponding month of last year, this represented an increase of 22 percent in quantity and 6 percent in value.

Ocean perch continued to be the leading item in poundage, with a total of 4.5 million pounds worth $183,500. Compared to the production of this same species during February 1954, this was a gain of 21 percent in quantity and 7 percent in value.

The most valuable species taken during the month was lobster, with 476,300 pounds valued at $382,700, for an average price of 80 cents per pound to the fishermen. Compared with the lobster production of February 1954, this year's catch showed a decline of 15 percent in volume but a 4 percent gain in value. Landings of miscellaneous fish during February were 651,800 pounds, or 208 percent above the receipts for the same period in 1954.

Otter trawls produced 87 percent of the total catch, followed by pots, trawl lines and hoes. Maine landings for the two-month period ending with February amounted to 12.8 million pounds, against 9.8 million pounds for the corresponding period of last year—an increase of 31 percent.

Imported Lobster Meat Bill Killed

The Sea & Shore Fisheries Committee of the Legislature, by an 8-1 vote, refused to grant approval to a measure intended to control the importation of lobster meat from Canada. The present law allows meat to be imported for canning if it conforms to the laws of the country from which it comes. At the same time, the law does not allow meat for freezing to be imported unless it does meet Maine standards.

Lobster Boat Launched

A 30-ft. lobster boat for Harold Ames of Matinicus was launched last month at the Rockland Boat Shop by builder Axel Gronros. The new craft, which has a beam of nine feet eight inches, is planked with cedar over oak frames. The craft has a small cabin forward and a canvas steering shelter. She is powered with a Chrysler Crown gasoline engine and is equipped with power hoisting gear.

New Marine Railway at Rockland

Work on the latest addition to the marine railway facilities of the Rockland waterfront was being rushed to completion at the Snow Marine Basin last month. A new railway and larger cradle, capable of handling medium-sized craft, was nearly completed.

Featured in TV Lobster Film

Two Boothbay Harbor men are featured in a television film recently released by the Sea & Shore Fisheries, entitled "Out of the Sea." Cliff Huskins appears as chef and shows the various ways of preparing Maine lobster. Stanley Reed is shown aboard his lobster boat with a catch of lobsters.

The film will be used throughout the country to promote the sale of Maine lobsters. United Airlines has requested use of the film as part of its own promotional campaign.

Annual Alewife Run Starts

Work on the 1955 alewife fishery in Warren started about the middle of April by the Homeport Fish Co. of Rockport. The fish will be trucked to the company's processing plant in watertight trucks as has been customary for the past few years. After the stay in pickle they will be barreled and shipped to Chicago and packed in glass for marketing in that section.

An Analysis of Starfish Control Measures as Practiced by Oystermen

By Charles F. Lee*

STARFISH have been the subject of control measures by the oystermen of the New England area for most of the 100 years since the beginning of the cultivation of oysters there in 1845. It is common knowledge among the oystermen that starfish show very large fluctuations in abundance from year to year.

Many of those in the oyster industry are of the opinion that decreases in the number of starfish are due to the intensive control efforts that are instituted when it is realized that the numbers are on the increase, and conversely, that the periods of great abundance follow temporary relaxation of control efforts when few starfish are to be found. Migrations from uncultivated areas not subject to control measures are considered largely responsible for maintenance of the starfish population.

With the exceptions of a 30-year record by a company on Narragansett Bay and one of seven years by a company in Connecticut, the oystermen do not have data on how many starfish are eliminated by these control efforts. Their primary interest is in the reduction of the number of starfish to the lowest practicable level.

Natural History and Distribution

In the waters along the shore of Long Island Sound, the lives of the starfish and the oyster are so closely interrelated, that a brief discussion of each is essential to the understanding of starfish control. Galtsoff and Loosanoff (1939) and Loosanoff and Engle (1940) have made extensive investigations of both the starfish and oyster, and much of the material presented here represents a summary of information from these sources.

The starfish will spawn when only one year old if conditions for growth have been favorable. Starfish spawning usually starts in June, some two weeks earlier than oyster spawning in the same waters. Both the starfish and oyster in the larval form are free-swimming for several weeks before setting on the bottom. When first changed from the larval stage, the young starfish is only about one millimeter in diameter, but it has a voracious appetite and grows rapidly.

Having spawned earlier, the young starfish may consume the newly-set oyster spat to the extent of virtually wiping out a good set. For this reason, it is desirable that the beds on which old shells are deposited for the purpose of catching the oyster spat be cleaned of as many adult starfish as possible before they begin to spawn. This will not entirely eliminate starfish, as the larvae in the free-swimming stage may be carried in from some distance by the tide and currents. Such cleansing limits the set, however, and is generally the practice in seed-oyster areas.

Method of Attack

The starfish opens the oyster by wrapping its rays about the shell and exerting a steady prolonged pull by means of the many "tube-feet" which line the under side of each ray. These tube-feet are capable of considerable adhesion, but it is the duration, rather than the degree of pull, which gradually fatigues the large muscle of the oyster so that it relaxes and the shell is opened. The starfish then turns its stomach literally "inside out" to envelop and eat the oyster meat. Some investigators have suggested that the starfish secretes a substance capable of narcotizing the oyster. This ability, if present, is most probably used after the oyster is opened to prevent further closing of the shells.

* Chemical engineer at the College Park, Md. laboratory of the Fish & Wildlife Service.

Bow of the 114' New Haven, Conn. suction oyster dredge "Rowe", showing the oyster drill killing mechanism. Two vibrating screens sift out the drills before they go into the long, inclined revolving barrel, where they are cooked by hot gases. The ship is at the dock of H. C. Rowe & Co., in New Haven. She is powered by twin 11½ x 15-in. Atlas Imperial Diesels. Suction hose on the vessel was manufactured by B. F. Goodrich Co.

It is apparent that smaller oysters are more readily and rapidly subject to starfish attack. Therefore, the seed-oyster grower is greatly concerned with starfish control.

The surveys of Galtsoff and Loosanoff have shown the depth distribution of starfish to be very similar to that of the oyster of the same waters. Almost all of the cultivated oyster beds, as well as the natural public beds, are in less than 30' of water and the great majority of the starfish were found in depths of less than 40'.

In the wintertime, when the water temperature decreases to 41°F. or lower, the starfish become much less active and many stop feeding. Consequently, destruction of oysters is greatest in the warmer months, but control efforts may be carried out the year around. Although found from Maine to Mexico, the starfish is rare north of Cape Ann. It is not considered to be a menace to the oyster industry of southern coastal waters.

The starfish is much more susceptible to changes in salinity than the oyster. This is the controlling factor in Chesapeake Bay and in many sections of the Gulf Coast. Starfish do not endure a salinity below 16 to 18 parts per thousand for more than a short time. They, therefore, do not penetrate the Chesapeake Bay much beyond Cape Charles and Norfolk. In the open waters of Long Island Sound, however, since the salt content is normally above 25 parts per thousand, salinity is not an important environmental deterrent. ("Effect of Sea Water of Reduced Salinities upon Starfish, *A forbesi*, of Long Island Sound", an extensive article on this subject written by Loosanoff, appeared in *Transactions of the Connecticut Academy of Arts and Sciences*, Vol. 36, pp. 813-835, 1945.)

Galtsoff and Loosanoff made several surveys in different seasons at a large number of stations in Long Island Sound, Buzzards Bay, and Narragansett Bay to study the local geographic distribution of the starfish. Generally speaking, there was no evidence of marked seasonal changes in abundance, within the same year, nor of migration from one area to another. Heaviest concentrations were found where food was abundant, in the western end of the Sound, and in Buzzards Bay near New Bedford and Wareham at the head of the Bay. In Narra-

(Continued on next page)

gansett Bay, near Prudence Island, starfish were plentiful, but relatively few were found in Block Island Sound.

Economic Aspects of Starfish Control

An accurate estimate of the damage caused the oyster industry by starfish is difficult to make since it should include not only the direct cost of control efforts, but also the potential value of young oysters killed and the value of marketable seed-stock and older oysters lost. A single medium-sized starfish may kill as many as five one-year-old oysters a day.

It is possible to calculate the potential loss if a conservative estimate is taken that 100 fair-sized oysters are killed a season by one starfish. Each bushel of starfish destroyed, therefore, represents perhaps 200,000 young oysters that may grow to market size. These would be worth about $1,000 as one- or two-year-old seed-oysters.

The daily "take" of a vessel engaged in starfishing will vary widely with the type of gear used and the density of starfish on the area worked. Sweet (1946) states that control efforts are carried out even when the amount taken is as low as 10 lbs. of starfish per hour per vessel or little more than a bushel per day. On the other hand, in seasons of abundance, the daily average yield may be 25 bushels per vessel per day, with maximum yields of 50 to 100 bushels. The usual catch is about 6 to 10 bushels per day on cultivated beds.

These costly control efforts for a non-productive purpose are justified by the potential damage each bushel of starfish is capable of causing if the more than 2,000 starfish it contains are left to continue their depredations throughout the season.

Methods Used

Mopping, dredging, and liming are the methods of starfish control in most general use. Control by other chemical agents, such as copper and zinc sulfate or chromium salts, has been studied, but none of these methods has proven practical.

Mopping is mostly used both because the mop causes little damage to the delicate seed-oysters and because it effectively and thoroughly cleans areas where few starfish are located. Dredging can be used to clean uncultivated areas free of oysters where the starfish population is very heavy. The regular oyster-dredging operations incidentally capture numerous starfish. These are killed with lime before the oysters are replanted. Liming can be used on either seed or "growing" oyster beds, the chief disadvantage of this method being the difficulty of distributing the lime in proper amounts over the desired areas.

The starfish mop, or tangle, is usually a home-made rig which does not follow any standard design. It is essentially a long bar to which are secured, at regular intervals, 6 to 12 short lengths of chain. Along each chain are tied the "mops", or bunches of string or twine. This outfit is slowly dragged over the bottom at the end of the dredge cable. The starfish become entangled in the mops, are unable to escape, and the mop is hauled up at intervals to remove the starfish.

Mops Dipped in Hot Water

Starfish may be hand-picked from the mops, but the operation is slow and expensive because extra deck-hands are required. Hand-picking may be used on vessels engaged in abundance-survey operations or on oyster vessels which do not have hot water tanks when pressed into starfish control during emergencies. Most of the seed-oyster companies operate one or more vessels exclusively for starfish control, and these are generally equipped with long vats or tanks into which the whole mop frame may be dipped. These tanks are filled with water at a temperature of about 150°F.

At this temperature, the starfish are not only killed, but are softened so that they are washed out of the mop as it is lowered for the next dragging operation. Two mops are used, one on each side of the boat, and only about two minutes are required for the hot-water dip. Thus, the mops are in use most of the time and a large area can be covered more effectively than with the dredge or hand-picked mop.

Lime has been found to kill starfish even when only a few small particles settle on the aboral surface. The chemical is only slightly soluble in water and is quite cheap and readily available. The lump lime may be shoveled over the boat rail to be disintegrated and dispersed as it settles to the bottom. Effective coverage in this manner is difficult, as some quantity may be carried away by tide and currents.

Loosanoff and Engle (1942) developed an apparatus for distributing a lime suspension immediately over the bottom. A stream of water from a centrifugal pump picked up the fine lime and the suspension was forced through a hose line to a distributor pipe which was carried a short distance above the bottom on a pair of wheels. This apparatus permits even distribution with little loss to tide and currents, but its use has not been widely adopted because of the expense and difficulty of obtaining the required new equipment.

A fourth control method, the Flower suction dredge, utilizes the principle of the vacuum cleaner. A wide funnel-shaped collector is carried on wheels at a short distance above the bottom. The distance could presumably be adjusted to permit removal of either light material only or almost anything loose, including mud and sand. A large centrifugal suction pump discharges this mixture into a rotating screen which separates the larger solid material and dumps it onto a conveyor. It has been reported that the desired selectivity of bottom material is hard to obtain with this suction dredge, and that operating costs are excessively high. Its use would not be justified except in periods of maximum abundance of starfish.

Seek Market for Starfish

There have been intermittent efforts over a period of years to find some use for starfish, interest in the subject being stimulated by recurring periods of abundance. The benefits to be derived from the discovery of some economically practical or even profitable means of using starfish would be threefold.

The oystermen would receive some return for starfish brought in, and inasmuch as all are now discarded, anything received would cut control cost by that extent. The creation of a market for starfish would, it may be assumed, lead to independent efforts towards their capture and to new sources of income for certain groups. Theoretically, at least, there would be a reduction of the starfish population in the whole area to a point where the peaks of abundance would no longer occur. This event would, of course, simplify the control of starfish on the leased beds and a second, and probably even larger saving to the oystermen would result thereby.

To this end, the Fish and Wildlife Service undertook an investigation of some of the possibilities of starfish utilization. It was found that the production of starfish meal is not practicable for the following reasons:

A. Control methods practiced by the oyster industry do not offer a reliable source of raw material.

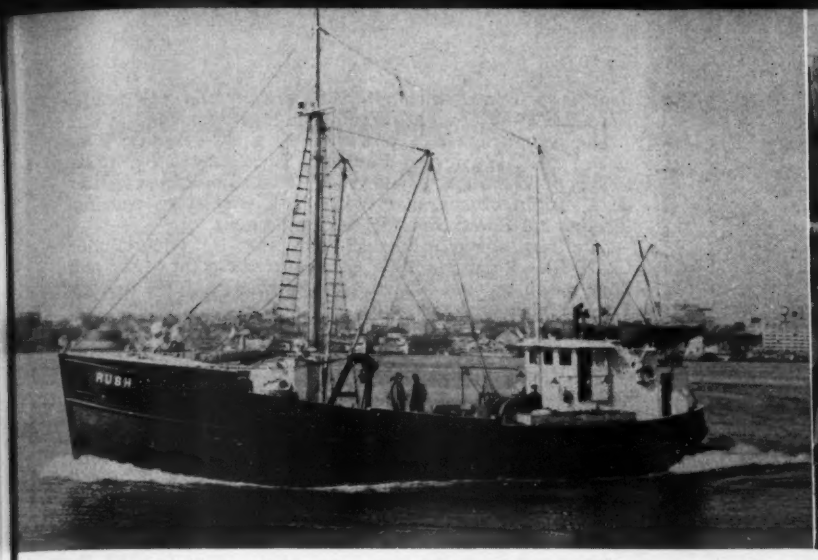
B. A separate fishery for starfish could not operate at present to yield raw material at a cost consistent with its value as a feedstuff or fertilizer.

C. Extreme annual fluctuations in the abundance of starfish create a very poor source of supply of raw material for a meal drying industry, regardless of the cost of raw material.

D. There are no by-products, such as oil, which might carry part of the production costs. The costs would be as high or higher than for any other by-product meal.

E. Starfish meal has a low nitrogen content and high ash content and therefore is a relatively low priced product.

Future technological research should be directed to the development of high-priced preparations from starfish. It would appear that development of methods for the separation of the amino acids of the protein of starfish might produce products of sufficiently high price to encourage the establishment of a separate fishery.



Capt. Rudolph Matland (left) of Fairhaven, Mass., owner of new 73' scallop dragger "Rush", and C. J. Maillet, engineer. The craft was built by Harvey F. Gamage, Shipbuilder, South Bristol, Me.

Scalloper "Rush" Begins Promising Career

Fiberglas lifeboats carried by new dragger which has landed first three trips at New Bedford, Mass.

NEW Bedford's newest scalloper, the 73' dragger *Rush* owned and skippered by Capt. Rudolph Matland of Fairhaven, Mass., has landed three fine trips during the six weeks she has been in operation. The craft was constructed in South Bristol, Maine, by Harvey F. Gamage, Shipbuilder, and started her fishing career March 12 when she left New Bedford for the scallop grounds.

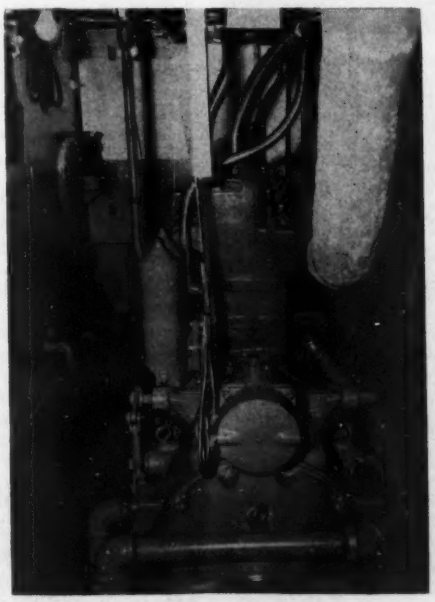
During her maiden voyage, Capt. Matland had opportunity to test the *Rush* in heavy winds and rough seas, particularly on the return trip when the dragger made 10 knots in a 60-mile gale. The craft arrived in port with her first catch March 23, landing 9,000 lbs. of scallops despite having lost two days' fishing to bad weather. On the vessel's next trip, which was landed April 6, she brought in 11,000 lbs. of scallops, and also had the same amount two weeks later when she unloaded her third fare.

Capt. Matland had been ashore for three years before going back to sea on the *Rush*. His new vessel replaces the dragger *Joan and Ursula*, sunk off Hathaway-Braley Wharf in the August 31 hurricane. The latter was raised and towed to Maine where part of her equipment was salvaged for use aboard the *Rush*.

The new scalloper is named for Matland's two children, Rudolph, who is 22 and serving with the Coast Guard, and Sharon, 7, who sponsored the boat for her father. Alfred Askeland of Fairhaven is mate aboard the dragger, and Calixte J. (Frenchy) Maillet is engineer.

Owner-skipper Matland has made the sea his life. He was born in Hollen, Norway, and was a fisherman in his youth. He came to the United States in 1924 and shipped out of Brooklyn as a seaman aboard merchant ships. Later he went to Nantucket and fished on island boats. His first command was on the *Anna* in 1931.

During 1939 and 1940 Matland was mate and skipper of the *Stanley Butler*, and from there he took over command of the *New Bedford* until she was requisitioned by the Navy in June 1942. It was then that he and Capt. Ernest Murley became joint owners of the *Joan and Ursula*, and in 1946 Capt. Matland bought out Murley.



Six-cylinder WM-1905, 7 x 8¼ Wolverine-Waukesha Diesel with which the "Rush" is powered.

In 1951 Matland purchased the dragger *Dauntless* with Francis (Sharkey) Folger, now skipper of the vessel. They took the craft to Fort Myers, Fla. in January 1954, to join the shrimping venture, but she remained in the South only four months.

Capt. Matland served as president of the New Bedford Seafood Producers Association from 1950 through 1952, and is treasurer at the present time. It was during his tenure as president that Coast Guard inspection of fishing boats was inaugurated. Both Matland's father, Capt. Knute Matland, and his brother, Capt. Sigurd Matland, were lost on the dragger *Penguin* in 1951.

Has Good Lines

Matland's new scalloper *Rush* has exceptionally good lines, and is laid out and equipped for efficient operation. With a 17'6" beam and 9'6" draft, her gross tonnage is 67 and the fish hold capacity is 75,000 lbs.

(Continued on next page)

Raytheon Fathometer Jr. recorder on new scallop dragger "Rush".

The *Rush* has 3" double sawn oak frames, molded and spaced on 16" centers. Her planking is 2" oak, while decking is 2½" white pine and her keel is oak, sided 9". Fastenings are galvanized.

The *Rush* carries the latest floating equipment in two 12'8" Fiberglas lifeboats, produced by Beetle Boat Co., New Bedford, Mass., and the first of their kind to be used on fishing vessels out of New Bedford. It is claimed that the lifeboats will never need paint, never crack and are unsinkable due to ballast air tanks. Each boat holds seven men, and has a built-in water tank and watertight compartment for food and supplies.

125-watt Apelco telephone on the "Rush".

The new scalloper's crew quarters are among the best in the fleet, with eight built-in mahogany-lined bunks in the fo'c's'le, two in the after cabin, and one in the pilothouse. Galley table and food cabinets are mahogany, and the large stainless steel galley sink is Formica-topped. The galley boasts a huge stainless steel freezer, and a Shipmate Model 450 oil-burning galley range.

The after cabin on the *Rush* has locker and storage space, as does the Captain's stateroom, which is just aft of the pilothouse, and also contains a chart table. Hot water heat is provided through radiators in the pilothouse, Captain's stateroom, after cabin and engine room.

The new dragger is powered by a six-cylinder WM-1905, 7 x 8¼ Wolverine-Waukesha Diesel, rated 255 hp. at 1000 rpm. The engine swings 56 x 38 Columbian propeller on 4" Tobin bronze shaft with Hathaway stern bearing, through 3:1 Snow-Nabstedt reduction gear.

Auxiliary power is furnished by an 8 hp. one-cylinder Lister Diesel, driving 3 kw. generator, air compressor and bilge pump, as well as two 3 hp. Fairbanks-Morse motors. The vessel is equipped with Marine Products pumps and carries a set of 32-volt Type KX-19-A Exide-Ironclad batteries. Navigation equipment includes 125-watt Apelco radiotelephone, both Raytheon Fathometer Jr. indicator and Fathometer Jr. recorder, two lorans, Wilfrid White compass, and Hathaway steering gear.

Much of the new vessel's deck gear was salvaged from the *Joan and Ursula*, including Hathaway winch and New England electric fish hoist. The fishing gear is so arranged on the main deck that the vessel can be converted from a scalloper to a conventional dragger with a minimum of change-over time. The *Rush* is equipped with Columbian cordage and Roebling wire rope. Her anchor is a 250 lb. Danforth.

The vessel's fuel is carried in four welded steel tanks with capacity of approximately 2700 gallons. The fresh water tanks hold about 600 gallons.

One of two 12'8" Fiberglas lifeboats carried by the "Rush". The craft are produced by Beetle Boat Co., and each will hold seven men.

Alabama Fresh Waters Reopened To Commercial Fishing

Fresh-water commercial fishing was reopened throughout Alabama recently, but several changes in equipment and regulations were ordered by the State Conservation Dept. After protests from many sporting organizations, commercial fishing was stopped in 21 Alabama counties last February.

In reopening the counties to commercial fishing, Conservation Director Bill Drinkard said fishery experts had advised that removal of commercial fish apparently does no harm, and may actually help sport fishermen. He said continuance of the commercial fishing ban would deprive the State of a valuable food supply and about 5 million dollars a year which could be earned by commercial fishermen.

Changes from the old commercial fishing laws that are now in effect are:

Hoop nets must have a two inch mesh with four inch stretch instead of 1½ inch mesh and three inch stretch.

Trammel net sizes have been changed from three inch bar with four inch stretch to four inch bar with eight inch stretch.

No commercial fishing will be allowed within 100 yards above or below the mouths of tributaries on the Tennessee River.

All commercial fishing shall be closed from 100 yards below the mouth of Elk River up Elk River to the Tennessee State line between May 1 and October 31 each year.

Oyster Shells to Be Planted

The Mobile Bay Seafood Union has been awarded a contract for the planting of approximately 70,000 barrels of oyster shells on natural reefs in waters of Mobile and Baldwin Counties.

About 20,000 barrels of shells will be planted on the natural oyster reefs of Bon Secour Bay, Baldwin County. Oyster bottoms in Mobile County recently leased by the State will receive large quantities of the plantings.

Buys Oyster Shell Company

The purchase of the Oyster Shell Products Corp. of Morgan City, La. by Southern Industries Corp., Mobile, was announced on April 16. Southern Industries chairman E. A. Roberts said the purchase was made through Southern Oyster Shell Milling Corp., a wholly-owned subsidiary.

Washington Salmon Plantings To Be Largest in History

Forty million salmon will be dumped into the streams of Washington State this year, the State Fisheries Department recently reported. That will make the largest reared salmon planting in the Department's history.

Eleven million salmon will go into rivers and creeks in King, Pierce, Mason, Kitsap and Thurston Counties. Green River will get more than five million. The rest will go into other streams in the State.

The commercial salmon fishing season on Puget Sound this year will follow patterns set last year and the year before, the Washington State Fisheries Dept. announced. The gill-net season, inside the Initiative 77 line, will run from June 15 through November 30, and the purse seine season will run from October 5 through November 30.

Outside the line, fishing with all gear will run from June 27 through November 30. This odd-year will see pink salmon running again after their absence last year. A special season opens August 8 for this run in Discovery Bay, and August 11 in Admiralty Inlet, north of Bush Point. Both areas will close at midnight August 31.

Launch Combination Gill-Netter, Beach Seiner

A combination gill-netter and beach seiner was launched late in April by Seattle's Sagstad Shipyard. The craft was christened the *Cecelia G.* in honor of the mother of the owner, Donald Pautzke.

Pautzke will use the vessel in Alaska's Cook Inlet and Kodiak areas. The 34-ft. craft is powered by a four-cylinder Diesel engine, and is equipped with a seine reel developed by the Sagstad yard for combination fishing.

A similar craft was launched by the yard for owners in Seldovia, Alaska. The first vessel was christened the *Dutchman.*

Big Fleet to Catch Halibut

Nearly 700 vessels will take part in this year's North Pacific halibut fishery. The season opens May 12. Halibut fishermen in all Pacific Northwest and Alaska ports were getting ready last month for the big rush to the fishing grounds.

About 3,000 fishermen will man the fleet. This vast armada of fishing vessels last year landed a total of 71 million lbs. of halibut, an all-time record. The fishing is regulated by the International Pacific Halibut Commission.

Salmon to Be Held in Sea Water on New Barge

A new type barge equipped with a refrigeration unit which permits fish to be kept in sea water at desired temperatures is being built in Seattle by Libby, McNeill & Libby. The barge has two tanks, each with capacity for 35 tons of fish. The craft is to be used in the Cook Inlet area for salmon fishing. It will be the first time such a barge has been used in Alaska salmon fishing.

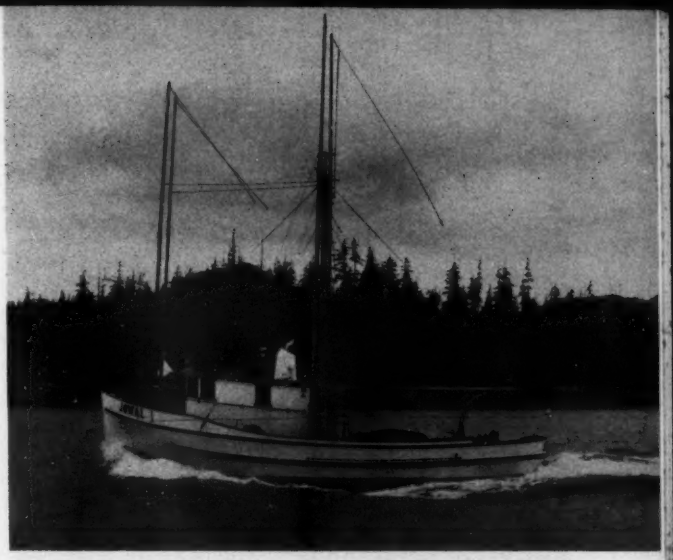
A York refrigerating unit will hold the water and fish in the tanks at a 30-degree temperature. The water is chilled by a serpentine coil installed so the fish do not come in contact with it.

By using the refrigerated sea water, the barge can take on fish a longer distance from the cannery, and it also eliminates necessity of going to the cannery every day with small loads of fish.

Seattle Otter Trawl Landings for April

During April landings in the Seattle otter trawl fishery amounted to 1,733,895 lbs., or 429,545 less than during March. The catch was landed in 57 trips. Leading varieties were true cod, with 752,290 lbs., followed by rockfish, petrale sole and English sole.

The biggest day of the month was the 26th when four vessels landed 201,540 lbs.



The "Jowal", 47' troller working out of Seattle and owned by Capt. Walter A. Savikko, Ketchikan, Alaska. The vessel has Cummins NHMR-600 Diesel with Twin Disc fluid coupling marine gear.

New Power Block for Use in Seining

A new piece of seining equipment, the Puretic power block, is being manufactured by the Marine Construction & Design Co. in Seattle. The block was invented by Mario Puretic, a fisherman since 1937.

The power block has been tested successfully and has aroused great interest among Pacific Northwest fishermen. The block makes possible a reduction of two to three crewmen, according to its inventor.

Made of cast aluminum, the block is made fast to the boom for hauling the net on deck. Two men are needed to coil the cork and the lead. The blocks are 28 inches in diameter, though plans are to make larger and smaller ones later. The cost of installation is comparatively low.

License Required to Transport or Sell Fish

Fishermen transporting or selling fish in waters within the jurisdiction of the State of Washington must have a license, regardless of where the fish were caught, the Washington State Supreme Court has ruled.

Alaska Fishermen's Union Elects

Swan Lundmark was re-elected assistant secretary-treasurer of the Alaska Fishermen's Union in Seattle April 1. George Johansen, secretary-treasurer, was unopposed for his office.

Others re-elected were Martin Olsen as agent in Portland, Oregon; Abe Lehto, San Francisco agent; and Jack Wood, Bellingham, Wash. agent.

Changes in Alaska Salmon Regulations

The most important change in 1955 commercial fishing regulations in Alaska is one which separates trap sites from areas open to set nets in Cook Inlet, the Fish & Wildlife Service reports. The amendment pinpoints the position of every trap in Cook Inlet, and the use of any other gear at such sites is prohibited.

Exception is made in the Northern and Central districts for the use of king salmon set nets prior to June 25, when traps cannot be used. Traps are prohibited in areas open to set nets.

Another amendment will allow beach seines in Chinitna Bay in Cook Inlet. This is a chum salmon area where the fish can be harvested only by beach seines.

Clawson Named to North Pacific Commission

John H. Clawson, Anchorage, Alaska, has been named to fill the post of Alaska Gov. Frank Heintzleman as a member of the International North Pacific Fisheries Commission. Heintzleman resigned April 6.

The 33'3" long line troller "Oregon" at Charleston, Ore. She is skippered by Capt. James H. Daily of Medford, Ore., and her engine is a 135 hp. Gray with 3:1 reduction gear. She uses Shell lubricating oil.

Oregon to Issue Fishing Licenses to Non-residents

A bill recently signed by Gov. Paul L. Patterson allows non-resident commercial fishermen to obtain licenses to fish in ocean waters over which the State of Oregon has jurisdiction. The new law became effective April 1.

Under previous laws, non-resident commercial fishermen could obtain only delivery licenses to land catches from ocean waters beyond the three-mile limit to Oregon dealers. A year's residence in Oregon, however, was required for issuance of a license to fish in ocean waters within the three-mile limit.

Another provision of the new law allows issuance of commercial fishing licenses to citizens under 18 years of age.

Columbia River Season Opens

The Spring commercial fishing season on the Columbia River opened April 30 and extends to May 27 in open areas above Bonneville dam as well as below.

After May 3, week-end commercial closures on the Columbia during the Spring season will be from noon Saturday until 6 p.m. Sunday. Other commercial restrictions include a 15-mile closure above Bonneville dam and a five-mile closed area below the dam.

The Fish Commission also asked both commercial and sport fishermen to report any tagged fish which might be caught, giving the location and date of capture. Tagged fish reports should be addressed to the Fish Commission research laboratory, Route 1, Box 31-A, Clackamas.

Jetty Work to Benefit Fishermen

Jetty repair work at Newport which will be carried on during the next year and a half will eventually be of considerable value to fishing boat owners. It will make the harbor more accessible to fishing boats and create a much smoother bar for them.

Approximately 200,000 tons of rock will be moved from the Beavercrest area by truck and placed on the jetty that protects the Yaquina bay channel on the north side.

Steelhead Tagged at McNary Dam

Approximately 570 adult steelhead were tagged in the dewatered Oregon shore fishway at McNary Dam last month through cooperative efforts of the Corps of Engineers and the Oregon Fish Commission. The fish were tagged with small, plastic discs by biologists to learn more of the migratory habits of steelhead in the Columbia River.

Nine steelhead which were tagged in January turned up in the Oregon fishway last month. Harry L. Rietze, Fish Commission biologist in charge of Columbia River investigations, said the nine previously tagged fish had to move downstream past the dam in order to get into the Oregon ladder.

Last month's tagging operation may indicate what effect, if any, the Oregon ladder has on steelhead migration. The tagged fish were divided into two groups for comparison. Half of the steelhead were released in the forebay above the dam and the other half were replaced in the fishway. Any migrational differences between the two groups should be detected in tag returns from upriver fisheries.

New Barge for Fisheries Department

A specially-built barge for the Washington Dept. of Fisheries has been launched at Lyle, Wash. It is some 50 ft. in length and on its trip up the Columbia recently it carried some 200,000 salmon fry. They were deposited in several feet of water carried in the holds of the barge. Pumps installed on the barge can pour in more water or take it out.

The fish are transported from the various hatcheries on both the Oregon and Washington sides of the Columbia River, thence to streams in the upper reaches on which they are liberated. All these fish were marked for identification, and the markings will disclose into which streams the fish were turned loose.

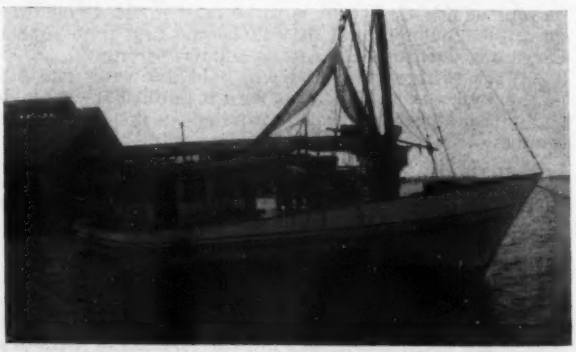
Mississippi Plans Expansion Of St. Joe Oyster Reef

According to Walter Gex of Bay St. Louis, the State Seafood Commission is planning to expand its new St. Joe oyster reef in Mississippi Sound and plant another 100,000 barrels of oysters on it. The Commission planted 75,000 barrels of oysters on the St. Joe reef last year.

Gex said the reef, located at the western boundary of Mississippi, next to the flow of Pearl River, has turned out even better than expectations, and has aided the State in having its best oyster crop in nearly 20 years.

Seafood Production Drops

The commercial production of fish and shellfish at Mississippi ports during January amounted to 835,000 pounds, compared to 1.3 million pounds during the same month of the previous year. This represented a decrease of approximately 36 percent.



BUILT IN 1902 WAS THE "MAYBELLE", which is used for shrimp trawling and oyster dredging by owner-skipper W. O. Jenkins of Biloxi, Miss. Power for the 57' vessel is furnished by a Caterpillar D8800 Diesel with Monel shaft.

JOHNSON SEA-HORSE LOST IN 10 FEET OF SALT WATER FOR EIGHT MONTHS... RUNS PERFECTLY!

JOHNSON
SEA-HORSE 5½
5½ H. P.

Salvage operators, Joseph Wellman and Ralph Biddle, of St. Petersburg, Florida, tell an amazing story about the Johnson Sea-Horse they use in their salvage work. It lay on the bottom of Tampa Bay for 8 months—so covered with barnacles and sea growth it was virtually unrecognizable.

After the men recovered the motor, the owner didn't want it, thinking it was damaged by corrosion beyond repair. So, Biddle and Wellman cleaned it, replaced the electrical parts at a small cost, and put it to work.

That was 4 years ago. *The Sea-Horse has been running sweetly ever since—and doing the job better than any other motor tried!*

"We need a motor that runs smoothly, and keeps running, at extremely slow speeds. We have been able to achieve this type of performance only from your Johnson," states Joseph Wellman.

Johnson Sea-Horses are DEPENDABLE. Ask any commercial boat owner. Better yet, see your Johnson Dealer. Look for his name under "Outboard Motors" in your classified telephone directory.

All 1955 Sea-Horses are QUIET

SEA-HORSE 25 Electric Starting	25 hp ... $525.00*
SEA-HORSE 25	25 hp 430.00*
SEA-HORSE 10	10 hp 310.00*
SEA-HORSE 5½	5½ hp 210.00*
SEA-HORSE 3	3 hp 145.00

* *Includes Mile-Master Fuel System.*

Prices f.o.b. factory, subject to change. All ratings are OBC certified brake hp. at 4000 rpm.

FREE! Send for catalog on the 5 great 1955 Sea-Horses—from 3 hp. to 25 hp. There's a correct model for every outboard need. Write to . . .

JOHNSON MOTORS, 6100 Pershing Road, Waukegan, Illinois

A DIVISION OF OUTBOARD, MARINE & MANUFACTURING COMPANY

In Canada: Manufactured by Johnson Motors, Peterborough

Johnson SEA-HORSE OUTBOARD MOTORS

ALL SEA-HORSES HAVE INTERNAL SALT WATER PROTECTION. NO FLUSHING NECESSARY!

45' fishing boat "Lynn", owned by George Steele of Crescent City, Calif. A converted landing barge, this boat is powered with a 6-71 General Motors Diesel.

California Has Heavy Tuna Pack in March

San Pedro canneries nearly doubled the tonnage of tuna canned in March over the same month of last year, when 6853 tons were packed. This year the total was 11,294. Together with the 761 tons packed at San Diego, the Southern California tuna pack total for March was 12,055 tons. Last year the two-city total was 10,098 tons.

For the first three months of the year San Pedro processed 25,620 tons of tuna, compared to 20,720 tons last year.

Major U. S. ports have been alerted to watch for shipments of Japanese tuna canned in water which might be dumped on the American market at less-than-production-cost prices. A White House source has informed San Pedro Harbor authorities that some 600,000 cases of the cheap tuna are due to be shipped to this country soon. Should large quantities of the canned tuna be dumped on the U. S. market, the Treasury Department is to assess special dumping rates on the fish in accordance with the U. S. anti-dumping law.

Suggests Air-lifting of Salmon Fry

Casper Zwierlein, veteran member of the San Francisco Tyee Club, may have come up with the solution to California's vexing salmon fishery problem. His answer to the declining chinook take is simply to air-lift salmon fry from the San Joaquin-Sacramento delta and drop them in the ocean. Zwierlein's club is an organization comprised of 500 sports salmon fishermen who are much interested in salmon conservation.

For several years Zwierlein has been graphing the combined ocean and river salmon catch, both sports and commercial. Correlating his catch graphs with rainfall figures, he stumbled on the surprising fact that invariably peak salmon seasons occur four years after a Winter of heavy rainfall.

Such was the case in 1918-19-20, and again in 1945-46-47 when the average seven-million-pound catch was doubled in each of the six years. That started him thinking on a new tack. If good years followed heavy rainfall, was it not logical to assume the reason was increased protection from the horde of river predators which feed on the small, ocean-bound migrants? With the added protection of muddy waters, thousands of fry successfully negotiated downstream perils. In years of normal rainfall Zwierlein theorized the tiny fish were decimated by lower Sacramento and San Joaquin River predators.

Conditioning the fry to salt water is no problem. He advocates putting the fish in a series of connected tanks of graduated salinity before they are planted. Finding a spot to air-drop the fish would require some prospecting. But he says a study of ocean currents indicates one trial area would be the edge of the continental shelf north and west of Cape Mendocino.

Another plan would be to capture the fish at Tracy and truck them to Tomales Bay which is relatively free of predators. To induce the small salmon to loiter in Tomales Bay and thus reach greater size and consequently increase the odds for ocean survival, he suggests fertilizing the bay.

Studying Spawning of Sardines

Biologists will be watching with more than ordinary interest the spawning habits of sardines off the Southern California coast this year. Last year's revival of the sardine fishing industry was foreshadowed by more widespread and enormously more abundant spawning.

John C. Marr, director of the Marine Life Research Program of the University of California's Scripps Institution of Oceanography, declared 2½ billion sardines spawned off Southern California last year, and the catch was 65,000 tons compared to 3,000 tons in 1953.

Eureka Boats Ready for Salmon Season

With bottom fishing still slow and crab fishing virtually completed, most Eureka fishermen towards the end of April were looking ahead to the opening of salmon season in the area May 1. Boats were being readied for the season, slated to run until September 30. A number of boats left for Oregon to participate in the season there.

Some half dozen Eureka boats were expected to take part in the halibut season which was scheduled to open in Humboldt waters May 12.

Rock Jetty to be Built

To make possible launching of private boats and the maneuvering of fishing skiffs from the boat landing at the mouth of Smith River, Calif., a rock jetty is to be built near Castle Rock Bay. Trolling skiffs use the bay during salmon season, and at certain tides fishermen anchor their boats at the entrance of the River.

Indications were that action taken by the Del Norte County Board of Supervisors in April may save destruction of Castle Rock, which the Army engineers had been considering razing for use on the harbor jetty.

Effect of Logging on Spawning Areas

Game wardens with the California State Dept. of Fish & Game are currently conducting a survey in Humboldt and Del Norte Counties to determine the amount of stream spawning area which has been affected by logging operations.

First phase of the project, which began around the first of April, was an aerial survey to be followed by an aerial photographic survey tentatively scheduled for this month. Certain areas are affected by timbering practices, but damage is not extensive in all areas.

Vessels Being Repaired

Gillette's Marine Ways at Fairhaven took in a number of boats recently for repairs. Among them was the *Stephanie*, a dragboat owned by Theodore Pappas of Crescent City, which was in for sandblasting, repainting and rudder repairs.

The *Peacock*, salmon troller owned by Erling Johanson of Eureka, went on the ways for cleaning, painting, repairs and straightening and re-balancing the propeller. Up for replacement of a portion of the keel, repair work on the deck and painting was the *Loreda*, a salmon boat belonging to M. J. Harrington of Crescent City.

Other boats included the Lazio dragboat the *New St. Joseph*, for repairs on the guard rail; the *Amac*, a dragboat owned by Charles Ells of Eureka, for exhaust stack repairs; and the *Toiler*, troller owned by R. C. Bolton of Coos Bay, in for straightening and repitching the propeller and cleaning and painting the bottom.

STARR NE

the best then - the best now!

For over half a century, Starr Netting has maintained the highest quality in dependable commercial fish netting.

Always in step with modern developments, Starr has set new industry standards having pioneered the use of synthetics in fish netting backed by long experience, the latest equipment and research methods.

STARR NETS

A. M. STARR NET CO.

EAST HAMPTON, CONNECTICUT

New Hatteras Trawlers

(Continued from page 17)

The *Mary K.* and *Edith M. II* are powered with a 205-hp. General Motors 6-110 Diesel turning 52 x 42 Columbian propeller. The vessels are equipped with Onan generating set with 32-volt, 1,500-watt output; and four Surrette batteries of 8 volts each. There are two Jabsco bilge pumps—a belt-driven model with clutch and a chain-driven pump without clutch.

Navigating and electronic equipment includes Bendix DR-9 depth recorder with 100-fathom range, 5" White compass and 76-B, 50-watt Apelco radiotelephone. On the deck of the new Hatteras Trawlers there is a Stroudsburg hoist carrying Wickwire wire rope. Other equipment includes One-Mile-Ray search light and Walter keel cooler.

Other Trawlers Building

First Spring delivery by Morehead City Shipbuilding Corp. of its 50' Hatteras Trawlers will go to Fred Sanders of Savannah, Georgia. His craft will be called *Miss Louise*. Subsequent deliveries of 50 and 55-foot trawlers go to John Smithson of Frogmore, S. C., Dick O'Neal of New Holland, N. C., and Wilbur Register of Shallotte. Work on three more 68' Hatteras Trawlers is in progress, and there are ten craft on the yard railways or moored to the yard docks to be overhauled. Several pairs of purse boats have been constructed recently for fishermen in near-by waters. Although the shipyard is busier than ever, their setup is such that they can take the increased work in their stride.

Besides their 50, 55, 60 and 68-foot Hatteras Trawlers, the Morehead City concern builds a 70-foot "Downeaster Beam Trawler," especially designed for fishing in rough, New England waters. Superintendent of the shipyard is Cicero S. Hardison, while Capt. James Mitchell is Design Engineer.

STROUDSBURG HOISTS

will haul in more shrimp

on New Hatteras Trawlers

"MARY K." and "EDITH M. II"

The newest additions to the growing fleet of "Hatteras" shrimp trawlers built by Morehead City Shipbuilding Corp., are equipped with Stroudsburg Hoists. They are the "Edith M. II", owned by Capt. Ottis Purifoy, one of the best known North Carolina fishermen; and the "Mary K.", owned by J. A. Jones of New Bern, another successful operator.

Engineered for long life, Stroudsburg hoists are made in single, double and triple drum models.

STROUDSBURG ENGINE WORKS

Box 207, Stroudsburg, Penna.

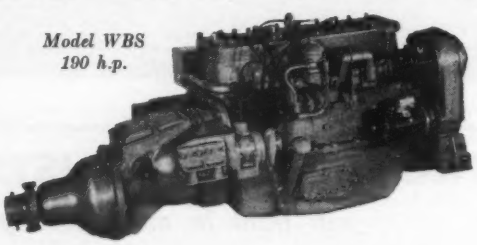
"The Fishermen's Choice is the Stroudsburg Hoist."

Captain Webb's "Jackbil" was built by M. W. Willis & Son, Marshallburg, N.C.

Famous fisherman chooses CHRIS-CRAFT MARINE ENGINES

Captain Bill Webb is well known as a sport fisherman from Ocean City, Md., to Bimini in the Bahamas. Last year, he decided to have a new fishing cruiser built, using everything he had learned in his many years of ocean fishing. Result: the 42-ft. *Jackbil* with long-leaf-pine framing, juniper planking, teak decks, all controls in semi-flying bridge with unrestricted view fore and aft — and two dependable Chris-Craft Marine Engines that provide a top speed of well over 21 mph!

Model WBS
190 h.p.



World's best buys in marine engines for commercial fishing, work or fun!

Horsepower for horsepower, you can't buy a better marine engine than a compact, power-packed Chris-Craft. *Records prove it!* For smooth, dependable power and more years of hard use at low upkeep cost, choose Chris-Craft yourself. Priced from $642, f.o.b. factory (subject to change without notice), Chris-Craft Marine Engines are available in 60, 95, 105, 120, 130, 131, 145, 158, 160 and 190 h.p., with reduction drives, opposite rotation and *Chris-O-Matic* (exclusive automatic clutch controls) for most models. See your Chris-Craft Dealer or mail coupon for catalog today!

Chris-Craft
MARINE ENGINE DIVISION
CHRIS-CRAFT CORPORATION, ALGONAC, MICH.
WORLD'S LARGEST BUILDERS OF MOTOR BOATS

CHRIS-CRAFT CORP., Algonac, Mich.
Send Chris-Craft Marine Engine Catalog to:

Name_____

Address_____

City_____ State_____

Great Lakes Smelt Run Reaches Its Peak

Smelt in the Great Lakes throughout April and May have been pushing up rivers, streams, creeks and even brooks in northern waters by droves to spawn. All along western shores of Lake Michigan the little silvery fish are concentrating by millions.

Al Pierson, Marquette, Mich. commercial fisherman, cleaning lake trout removed from gill nets in Lake Superior.

Commercial fish buyers and fish wholesalers have made it a rule not to buy lake smelt except from licensed fishermen, which includes dip net fishermen. This self-imposed rule is to protect the industry against poor quality and unreasonable prices.

In the Ashland, Wis. area of Lake Superior, good yields of smelt were reported. Gill net fishermen operating from Cornucopia and Bayfield, Wis., Ontonagon, Hancock, Chassel, Marquette, Munising, Grand Marais, Whitefish Point and Brimley, Mich., were getting fair catches of lake trout but nothing impressive. Smelt in several areas of Lake Superior were running strong.

In the Green Bay area, good smelt catches were reported in most streams, but Day's River near Gladstone and Valentine Creek in Garden, Mich., provided netters with record takes. Griffin Associated Fisheries has a crew of 130 working in smelt cleaning operations, including a night crew of 60 women. Griffin's plant is processing about 10,000 lbs. of smelt daily in Escanaba, Mich. Jensen & Jensen Fish Market and other fish buyers also have purchased huge quantities of netted smelt.

Manitowoc, Wis., a favored spot for smelt netting, is providing good yields. Marinette, Wis. fishermen who are fishing in deep waters, are getting good catches.

From Lake Huron, particularly off Saginaw Bay streams, heavy smelt concentrations were seen and catches, generally, have been heavy. Fair to good catches of lake perch, pike, chub, suckers, etc. were reportedly taken by United States fishermen, while Canadian fishermen were getting good yields of pike but no impressive whitefish catches.

On Lake Erie, fishermen operating out of Monroe, Mich.; Port Clinton, Sandusky, Vermilion, Huron, Lorain, Cleveland Fairport Harbor, Ashtabula and Conneaut, Ohio; Erie, Pa.; Dunkirk and Silver Creek, N. Y. were getting fair to good Spring catches. Currently, Spring pike runs are providing producers with nice yields, and with the new nylon nets, producers seem to have less overhead on nets as well as improved production.

Lake Superior to Get Trout Fry

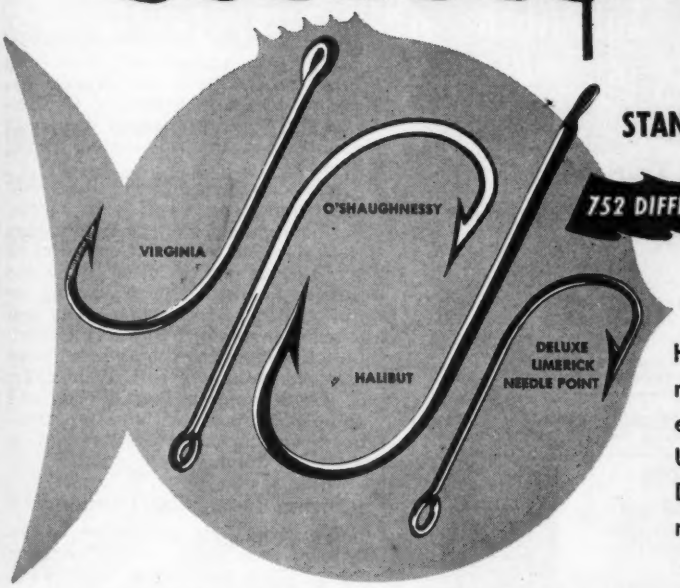
A total of 450,000 lake trout fry were scheduled to be released in three Lake Superior areas this Spring, according to Russ Robertson of the Marquette fish hatchery on Cherry Creek. The areas are Whitefish Point, Munising and the Keweenaw Peninsula.

All of the fry were reared at the Marquette hatchery from eggs turned over to the department by Lake Superior fishermen last Fall. Plantings are made each Spring by department personnel in an effort to help re-stock Lake Superior's lake trout population.

PFLUEGER HOOKS

STANDARD OF FISHERMEN EVERYWHERE

752 DIFFERENT TYPES AND SIZES REGULARLY STOCKED



You can depend on Pflueger Hooks to give long service. They're made of the toughest steel, finely tempered to hold shape and finish. Made in U.S.A. by third generation of Pfluegers. Demand Pflueger hooks and you'll catch more fish.

THE ENTERPRISE MANUFACTURING CO., AKRON, OHIO
90 YEARS OF MAKING FINE TACKLE

PFLUEGER (Pronounced "FLEW-GER") MADE IN U.S.A. A GREAT NAME IN TACKLE

Fish Production Shows Increase in 1954

From a report just released by the Michigan Conservation Department, statistics reveal that Lake Superior yielded 1,600,000 lbs. of lake trout to Michigan commercial fishermen last year. From Lake Michigan, however, only 85 lbs. of trout were taken in Michigan waters, and none from Lake Huron.

Great Lakes waters yielded 27,000,000 lbs. of fish to Michigan fishermen in 1954. The catch was 1,000,000 lbs. above the annual average, and Lake Michigan led with production for the year amounting to 14,200,000 lbs.

Herring, which seem to ward off lamprey attacks by their ability to sidestep, provided 8,500,000 lbs., and smelt came in second with an all-time record of 4,900,000 lbs. The smelt population is evidently at a record peak, foretelling tremendous takes by dip net fishermen in current weeks.

The total poundage of carp, chubs, lake trout, and yellow perch was 9,000,000. Sixteen other varieties of fish made up the remainder of the harvest of 27,000,000 lbs.

By lakes, the totals were: Michigan, 14,200,000; Superior, 5,800,000; Huron, 5,400,000 and Lake Erie, about 1,800,000 for Michigan waters. The whitefish take was relatively light in 1954, but whitefish are more influenced by cycles, and reach sensational abundance at times.

Fishermen in Ohio's Lake Erie waters in 1954 produced a total of 23,400,000 lbs. of fish, or approximately 2,000,000 lbs. more than the average annual catch over a 10-year period. Yellow pickerel was first with a total of nearly 5,000,000 lbs., with blue pike a close second at more than 4,500,000 lbs. Yellow perch, with a total yield of nearly 4,000,000 lbs. came in third.

Trap nets produced 17,900,000 lbs; fyke nets 72,200 lbs.; seines 3,722,000 lbs.; and gill nets 1,750,000 lbs.

Transfer Walleyed Pike over Dam

The netting and transfer of walleyed pike below the dam on the Muskegon River at Muskegon, Mich., was started early last month. Objective, according to Ed Anderson, district supervisor, is to get in on the start of the annual run instead of trying to hit the peak.

Netting continued for 15 days or until 10,000 walleye spawners had been netted. During that period, sport fishing was barred between 6 p.m. and 8 a.m. in a section of river stretching 2,000 ft. below the lower bridge.

Commercial Fishermen Get Sandusky Bay Area

In a 110-2 vote the Ohio House recently approved a bill which marks off an area of Sandusky Bay for commercial fishermen. Enactment of this legislation will end a quarter of a century of controversy between hook-and-line and commercial fishermen. By the terms of the bill, a channel into and out of the bay and the mouth of the Sandusky River will be kept open.

Seek More Liberal Chub Regulations

Assemblyman Frank LeClair and Everett LaFond of Two Rivers and Frank Miller of Milwaukee, Wis. recently asked the Conservation Commission to permit them to fish for chubs with deeper nets and smaller mesh. The Commission voted to delay the matter until anyone opposing the more liberal regulations could be heard.

The purpose of the liberalization would be to take small chubs, in demand now since lampreys have killed many of the large ones. Under the proposal, nets could be 10' in depth instead of 6', and there would be no enforcement of the regulation requiring minimum mesh of 2½ inches.

THROW YOUR HEAT EXCHANGER TROUBLES OVERBOARD!

It Costs Too Much To Be Behind The Times

The fishermen who make the most money keep their boats up-to-date with modern inventions. That's why boat owners from coast to coast have turned to **AQUA-CLEAR Feeders** for the most efficient, low-cost engine cooling. You'll cut repair bills, reduce maintenance and greatly increase your profits.

Makes Old Engines Last Years Longer —Keeps New Ones From Ever Rusting.

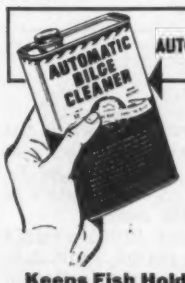
AQUA-CLEAR Feeders

COOL DIRECT WITH RAW SEA WATER Without Rust, Corrosion or Salting Down

● For over 50 years there was no way to avoid the heavy expense of closed cooling systems. The AQUA-CLEAR Feeder revolutionized marine engine cooling by eliminating inefficient, roundabout ways of keeping salt water out. Aqua-Clear makes all water in the cooling system non-corrosive—you can cool direct without heat exchangers, expansion tanks, complicated piping.

More than 30,000 enthusiastic users say Sudbury's AQUA-CLEAR Feeder completely protects marine engines from rust, corrosion and salting down. It also protects water lines, refrigeration equipment, etc. Non-toxic.

Made for all size engines. Only $49.95 for gasoline engines up to 150 hp. Only $128.75 for Diesel with 1½-in. pipeline. Other sizes in proportion.



AUTOMATIC BILGE CLEANER

Saves Money, Time and Labor

● Reaches where nothing else can—into every corner, even underneath engines and floorboards, gets all grease, slime. Cuts labor costs—no more scrubbing and scraping. **Ends Fire Hazard**—mixes all floating gas or oil with the water and keeps it emulsified so it's pumped out when you pump the bilge. Protects caulking, harmless to paint, fittings, even your hands.

The only Bilge Cleaner with the new miracle deodorizer, MIRASOL (shrimp boats use it instead of pine oil).

Keeps Fish Holds Sanitary—Protects the quality of your catch—avoids spoilage. Cleans everything above and below deck. Quickly and easily removes all gurry and gull droppings. Non-caustic—perfect for washing fabrics, dishes, pots, pans—everything aboard ship. **Low priced, Pint $1.29; Qt. $1.98; Gal. $7.50.**

LET THE ROLL OF THE BOAT CLEAN THE BILGE!

TYPHOON BILGE PUMP

Radically Different—100% Non-Corrosive—Non-Clogging

● The only ALL-LUCITE bilge pump, no metal of any kind. Heavy duty slotted lucite housing needs no screen, greatly increasing capacity—practically impossible to clog! Runs for months without servicing. Unique design takes motor right out of the bilge—no spark can ignite dangerous fumes below.

No close alignment necessary. Lifetime oilless, friction-proof shaft runs on glass bearing. Big capacity—pumps 600 gallons per hour (4-in. size 300 gal.). Even running dry will not injure pump.

So accessible, so simple you can quickly and easily remove motor, drive shaft, even pump impeller—in only 30 seconds without tools! For trouble-free performance, order one today!

Made for 6, 12, 32 or 110 volt systems. Standard drive shaft 18-in. long; can be supplied up to 6 ft. without extra charge. **Fully Guaranteed.** For manual operation, 4-in. **$39.95;** 6-in. **$49.95.** With Automatic Switch, add $10.

If your dealer does not display Sudbury Products, order direct.

SUDBURY LABORATORY, Box 989, South Sudbury, Mass.

Connecticut Fishermen Want Research Done

A recommendation that a permanent fisheries commission be set up and the State undertake fisheries study with universities has been submitted to the Conn. General Assembly by the Southern N. E. Fishermen's Assoc., composed mainly of members of the Stonington fishing fleet.

As a step toward getting the movement underway, Capt. I. M. Jacobs, business manager of the Association, gave the Fish & Game Committee of the Legislature a letter from the Stonington fishing fleet offering its full facilities—boats, men, nets and other gear to get the project started. Letters supporting the proposal were received from Henry R. Palmer, Jr. of the Stonington Boat Works and John B. Bindloss, as Conn. representative on the Atlantic States Marine Fisheries Commission.

Johnson Has New Dragger

Capt. Carl Johnson, skipper of the ill-fated Stonington fishing dragger *Russell S.*, lost when she went aground off Long Island in January, is expected to start operations soon with a new boat recently obtained in Florida.

Capt. Johnson has acquired the 82-ft. *Nautican*, which, when it is placed in operation, will be the largest boat in the Stonington fleet. The new dragger will be one of the best-equipped, and will have a refrigerated hold and many other modern improvements.

Hampered by Weather

Most of the activity in the Stonington fishing fleet during April was in the trash fishing field, as market fish were running light and only small landings were noted. Rain, cold weather and generally poor fishing conditions combined to hamper operations. The majority of the boats in the fishing fleet were idled for nearly half of the month as the weatherman failed to cooperate.

May started off on a bright note with 20,200 lbs. of market fish and 120,000 lbs. of trash fish sent out from Stonington docks the first day of the month.

Want to Halt Oil Pollution

Representatives of the Conn. State Shellfish Commission told the State Legislature's Fish and Game Committee recently that oil-polluted waters were endangering oyster beds off the State's shores. The Shellfish Commission offered a bill which would empower the State Water Commission to police State waterways in an attempt to halt pollution. The bill would give such responsibility to the State agency rather than to the Federal Government, as is now the case.

New Coast Guard boats carry Danforth anchors

Equip your boat, too, with the safest anchor of all!

ANCHORS and ANCHORING
Free to you—illustrated 16-page booklet giving you complete, practical information in an interesting way. Just send name and address.

DANFORTH® ANCHORS

DANFORTH is the registered trade mark of Danforth Anchors

The Coast Guard fleet that plays watchdog along the coasts and possessions of the United States is taking on a new look—scrappy, 20 knot, 40-foot steel picket boats, and fast, seaworthy 95-footers. Through scientific test and experience, the Coast Guard knows how to equip its boats, so new construction carries Danforth anchors. In all kinds of weather, and off the Atlantic, Pacific, Gulf, Hawaiian, Alaskan, and other Coasts, the Coast Guard depends on the one anchor that *holds* better and *handles* easier than any other anchor—the Danforth. Isn't it time for you, too, to give that old bower the deep six and invest in the security that only Danforth can give you?

Florida State University Studying Southern Oysters

Food and nutrition experts and all scientists associated with the Florida State University's Oceanographic Institute are oyster-conscious as a result of two recent contracts signed between Florida State and U. S. Fish and Wildlife Service for research on Southern oysters.

Most of the experimental work will be carried out at FSU in the Department of Food and Nutrition under direction of Dr. Betty Watts and Dr. Harvey Lewis. Dr. R. Winston Menzel, oyster biologist in the Oceanographic Institute, is supervising collection of the experimental oysters under known environmental conditions.

Dr. Watts said major concerns of the team are to evaluate quality and nutritive value of fresh oysters under various experimental conditions, to explore possibilities for preserving high quality for long periods and to develop new types of fresh and frozen oyster products.

Since only a small part of oysters from the Apalachicola region are now preserved by freezing, the team wants to develop new freezing techniques. And ways and means of increasing oyster consumption with a variety of new products will be investigated. The team is thinking along the lines of frozen fried oysters, scalloped oysters, stews and smoke-flavored oysters.

Legislation Affecting Franklin County

A 1951 law which prohibits fishing in portions of Franklin County would be repealed under a bill introduced on April 20. The bill would permit fishing between the west end of Alligator Point, northwest to the end of Camp Weed dock in Franklin

Another bill introduced would make it lawful to deal in shrimp commercially in Franklin County after July 1, 1955. The measure would provide, however, that a majority of shrimp should measure at least 65 to the pound with heads or 105 without.

Vote Funds for Red Tide Research

The House Appropriations Committee on April 27 approved a $120,000 appropriation for the University of Miami Laboratory to do red tide research. The Committee also voted to have $100,000 of the cabinet's $1,000,000 emergency fund earmarked for use in the event of a red tide emergency.

Would Restrict Dragging for Bait Shrimp

Pasco County Commissioners have requested the adoption of a bill by the Legislature to prohibit dragging for bait shrimp from the Gulf shore of the County. The measure is sought because the bait shrimping is said to damage the fish feeding grounds along the coast.

Fishermen Protest Channel Fill

A group of fishermen last month protested to the Pinellas County Commissioners that a proposed fill south of Ozona would endanger their livelihood. A permit has been requested to dredge up a fill extending into the mouth of Minnow Creek from the north shore.

Fishermen now can stand on their docks and spot boats in distress or tell whether it is too rough in the Gulf to go out. But, it is claimed that the proposed fill would cut across the fishermen's channel to deep water, block their view of the Gulf and make the mouth of the creek an inland lake.

Seek Repeal of Closed Mullet Season

A bill to remove the closed season on mullet was introduced on April 20 by Rep. D. C. Jones of Collier County. Closed season on mullet is from December 10 to January 20.

Jones explained the University of Miami marine research organization has asserted the closed season serves no practical purpose.

The 53' x 15½' x 6' shrimper "Francis-Eve", owned by Francis Alcina of Franklin, La., and powered with a 120 hp. Caterpillar D13000 Diesel. She makes 14 mph. with 10 tons ice.

Louisiana Oystermen Protest Random Channel Dredging

Glen Martina, president of the Louisiana Oyster Growers and Dealers Association, told the Corps of Engineers the latter part of April that the oyster industry has been hard hit by industrial advancements and the ramifications therefrom. This was part of a statement made at a public hearing conducted by the U. S. Engineers on controlling channel dredging in Louisiana and levee and spoil bank placement.

The dredging of channels and the placement of spoil has become a major concern of the oystermen. It is said that frequently channels for oil operations and even navigation have been dredged without regard to oyster beds, and that the dredging has resulted in widespread oyster losses. Furthermore, it is claimed that spoil areas have changed currents, and in some cases spoil has been dumped in such a manner as to cover oysters.

Very recently, in a few areas, oystermen have suffered direct losses to their oysters from oil well drilling. For the first time in years the Louisiana State Biologist has been able to obtain sufficient evidence to require the companies to compensate the growers for losses.

In spite of handicaps, the Louisiana growers report a good production year, with fat oysters. The State soon will begin its shell plantings to grow seed oysters.

Shrimping Season Opens

The shrimp season which has been closed since February 15, opened again on April 16 and will remain open until June 21, according to an announcement made by L. D. Young, Jr., Director of the Wildlife and Fisheries Commission.

This means that trawling for shrimp will be legal in all Louisiana waters, not covered by special regulation or law. The size limit on salt-water shrimp is not more than 68 to the pound. This restriction does not apply, however, to shrimp taken or had in possession for bait. No trawling is permitted at night.

Fish and Seafood to be Promoted

The Fish & Wildlife Service is assigning a fish marketing specialist to New Orleans for permanent duty to serve a five-State area in an effort to get people to eat more Gulf of Mexico fish and other seafoods. Michael Weissman, formerly in the wholesale seafood business in the New York City area, is moving to New Orleans to head the education and promotion office for Alabama, Mississippi, Tennessee, Kentucky and Louisiana.

Oil Firms to Bury Pipe Lines

Oil company representatives agreed last month to bury pipe lines so they would not interfere with shrimp trawling. James N. McConnell, Chief of the Division of Oysters and Waterbottoms of the Louisiana Wildlife and Fisheries Commission, said the agreement was reached at a meeting of representatives of the oil and seafood industries.

Texas Shrimp Catch Shows Big Gain in Five-Month Period

Landings of shrimp in Texas during the first five months of the current fiscal year were 43,781,175 lbs., as compared with 35,346,890 lbs. for the same period last year. Menhaden production was 7,926,100 lbs., against 20,876,400 lbs. In spite of the 12-million-lb. drop in menhaden, the total production of marine products was 53,421,280 lbs. the first five months of this fiscal year, as compared with 57,317,760 lbs. for the same period last year.

Unfavorable weather conditions were mainly responsible for small landings of shrimp at the principal Texas ports during the March 21-April 21 period. Bay shrimping has been a failure this Spring; in fact, less than one per cent of shrimp landed since last November have been taken in the bays.

Many fishermen believe that the great waste of small shrimp taken in the bays is responsible. The Texas Game & Fish Commission noted last Summer that more than 75 per cent of shrimp being caught in trawls were wasted because they were too small for commercial uses.

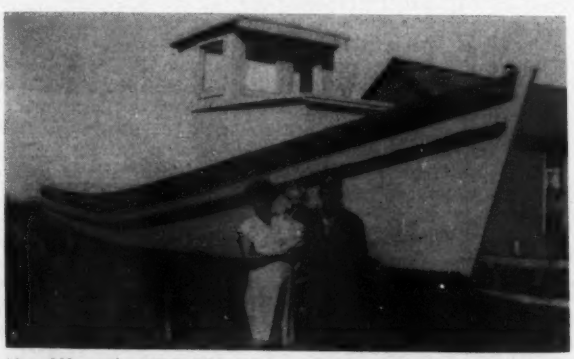
Practically all the shrimp taken during the March 21-April 21 period were brown grooved. These were from the South Gulf. The few white shrimp caught were landed at North Texas ports.

Total landings of shrimp reported for the period were 15,089 barrels. Brownsville area ranked first with 5,470 barrels; Aransas Pass-Corpus Christi area was second with 4,550 barrels; Port Isabel was third with 2,732.

Production of edible finfish for the 30-day period was normal with 209,890 lbs. reported. Red snapper led the list with more than 100,000 lbs. Black drum, speckled trout and red drum production was normal.

Reimbursements for Shrimp Boat Seizures

Congressman Joseph M. Kilgore of Texas has introduced a bill for the relief of those shrimp boat owners whose vessels were seized by Mexican authorities some years ago while operating outside the territorial waters of Mexico. If enacted, the bill would provide relief for the following boat owners who suffered considerable financial



New 32' x 11' x 1'8" fishing boat owned by William H. Smith, Jr. of Port Bolivar, Texas, who built her with Josie Auzston. She has 60 hp. Chris-Craft engine which gives her a speed of 12 mph.

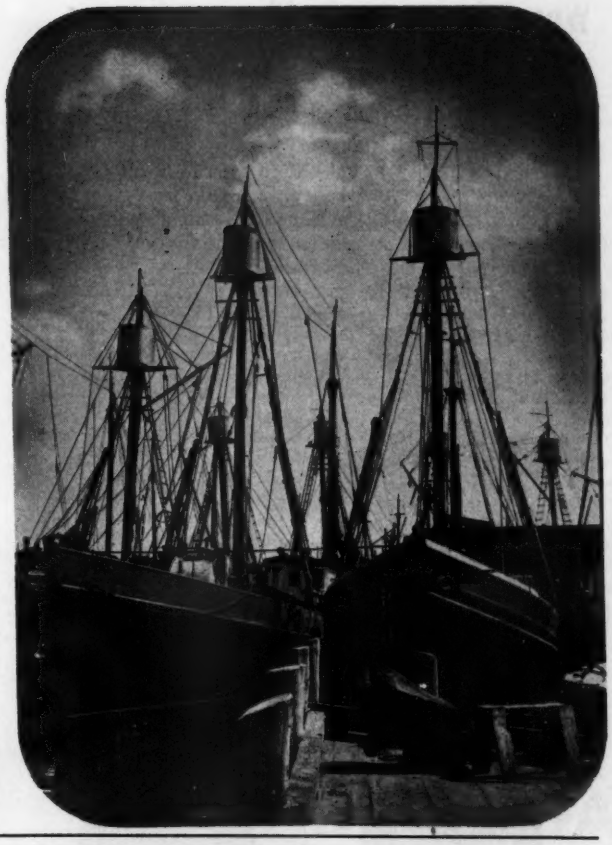
A new and better rope for fishing!

ROEBLING PREFORMED

SPECIAL GALVANIZED

DOLLAR FOR DOLLAR this new Roebling Fishing Rope is the biggest value ever put on the market. It has top resistance to corrosion, *special* galvanizing protects every inch of every wire. The fibre core is impregnated with a preservative that prevents excessive absorption and reduces the harmful action of salt water, mildew and dry rot. Roebling preforming assures easier handling, smooth drum winding...and practically abolishes all tendency to kink.

Make it Roebling's new Preformed Special Galvanized next time you order fishing rope. And remember that for standing rigging and every other purpose there's a Roebling wire rope for complete dependability and service economy. Call your distributor or the nearest Roebling office. They're in the yellow pages. John A. Roebling's Sons Corporation, Trenton 2, N. J.



ROEBLING

SUBSIDIARY OF THE COLORADO FUEL AND IRON CORPORATION

loss because of the seizures: F. P. Tower, Lillie B. Lewis, Manuel Branco, John Santos Carinhas, Joaquin Gomez Carinhas and Manuel Jesus Carinhas.

Minimum Size for Trout, Flounders, Redfish

House Bill No. 169 is now a law. It provides a minimum length of 12 inches for trout and flounders and 14 inches for redfish caught in Laguna Madre in Cameron, Willacy and Kennedy Counties.

"Brenda B." Lost

The shrimp trawler *Brenda B.* went to the bottom of the Gulf early last month. The skipper, D. R. LeBeouf and one crewman were picked up by another trawler, the *Georgia Pine*. The owners of the ill-fated vessel are Mack Gore and Elton Olier of Brownsville.

Make Plans for Fleet Blessing

The Port Isabel Shrimp Fiesta Assoc. elected new officers for their 1955 Blessing of the Fleet pageant at a meeting last month in Port Isabel.

J. B. Vance, Brownsville, who reigned as king of the fleet in last year's ceremonies, was elected president to succeed T. B. Mock. Other officers named were Bob Bell, vice-president; and Mrs. C. H. Williams, secretary-treasurer.

Georgia Shrimpers Land Big Jewfish

A two-man crew on a shrimp boat owned by Joe Cruz of Brunswick landed a 330-lb. jewfish while dragging a net recently off Cumberland Island.

The fish measured six feet and after being landed was dressed and put in the cold storage box of A. Murta, operator of the Mutual Shrimp Co. The jewfish is considered to be a choice seafood, and will be sold to a New York seafood company.

PERFECT FORMULA for MAXIMUM POWER where propeller space is restricted

Scores of owners of boats with restricted propeller clearance have found that switching to a Michigan 4-blade Workhorse gives infinitely better performance. The answer lies in the fact that the Workhorse has more than 1/3 more blade area than the 3 or 5-blade propeller of equal diameter. In a restricted space, the Workhorse consequently provides the necessary blade area to give maximum thrust at your engine's most effective RPM.

Our engineers will gladly recommend the correct propeller for your craft. Write for form.

MICHIGAN WHEEL COMPANY GRAND RAPIDS, MICHIGAN

When the spray is like needles

...KEEP DRY

Vulcanized seams—to make the whole garment waterproof. Specially developed compounds provide greater resistance to sun, water and abrasion.

U. S. SAFE AND SEINE SUIT

- strong heavy-coated fabric
- vulcanized waterproof seams
- full-length jacket
- inside fly front
- corduroy-tipped collar
- rust-resistant ball and socket fasteners
- large bib-front overalls
- adjustable suspenders
- short length for wear with boots

U. S. RUFF-N-TUFF EUREKA SUIT

- strong heavy-coated fabric
- vulcanized waterproof seams
- full-length jacket
- inside fly front
- corduroy-tipped collar
- rust-resistant ball and socket fasteners
- bib-front overalls, elastic suspenders
- cut-off band permits shortening without curling or raveling

U. S. SQUAM HAT

- reinforced water-shed brim
- made plain or with head lining, ear flaps and chin strap

TRAWLER BOOTS

- Black thigh
- Felt lined
- "Fin-Guard" vamp

U. S. INDUSTRIAL RAYNSTERS®
U. S. ROYAL RUBBER FOOTWEAR

SOLD ONLY THROUGH INDUSTRIAL AND RETAIL STORES

US RUBBER

UNITED STATES RUBBER COMPANY
ROCKEFELLER CENTER • NEW YORK

Pump and Electricity

(Continued from page 11)

when the lamp was operated at its full brilliancy. Tests using more than one lamp, however, did not result in an increased catch.

The light apparently could be used at only one position to best advantage. The maximum catches were made when the light was placed 12 inches in front of the anode and 18 inches above the center of it. When additional lamps were used at other positions, catches were not increased.

A number of uncontrolled factors influenced the catch. The more important of these were (1) availability of fish, (2) presence of predators, (3) movement of the vessel caused by wind and tide (any movement of the light and electrode assembly, which was suspended from the vessel, frightened the fish), and (4) the changing time of day (herring were observed to approach the light in greatest numbers for approximately 1 to 2 hours at daybreak).

As the fish came out of the discharge hose into the receiving tank, an estimated 60 percent of them were dead or dying. These fish were killed either by physical abrasion while coming through the hose and pump or by electric shock, or by both. It is likely that any fish that made a firm contact with the anode was electrocuted.

No herring were observed in the outside waters off Cape Flattery, and the tests there were unsuccessful. Even if herring definitely had been present, however, the movement of the gear caused by the ocean swell and chop probably would have frightened them away.

For work in the open ocean where the attracting and guiding assembly is subjected to the swell and the chop of the seas, a method of support should be designed which would leave the assembly independent of the vessel's motion. This support also should be made to hold the assembly at a constant level in the water where it will be unaffected by movement of the surface of the water.

Pumping Arrangement

The pumping arrangement consisted of a 4-inch bladeless-impeller pump coupled to a 5 hp. electric motor. The pumping capacity was 220 gallons of water per minute. The intake hose was passed through a closed chock into the sea water, and the discharge hose was run to the receiving tank and firmly fastened.

The receiving tank was built on the after deck. This tank was 8 feet wide and 13 feet long and could be filled to a depth of approximately 10 inches when the vessel was in calm water.

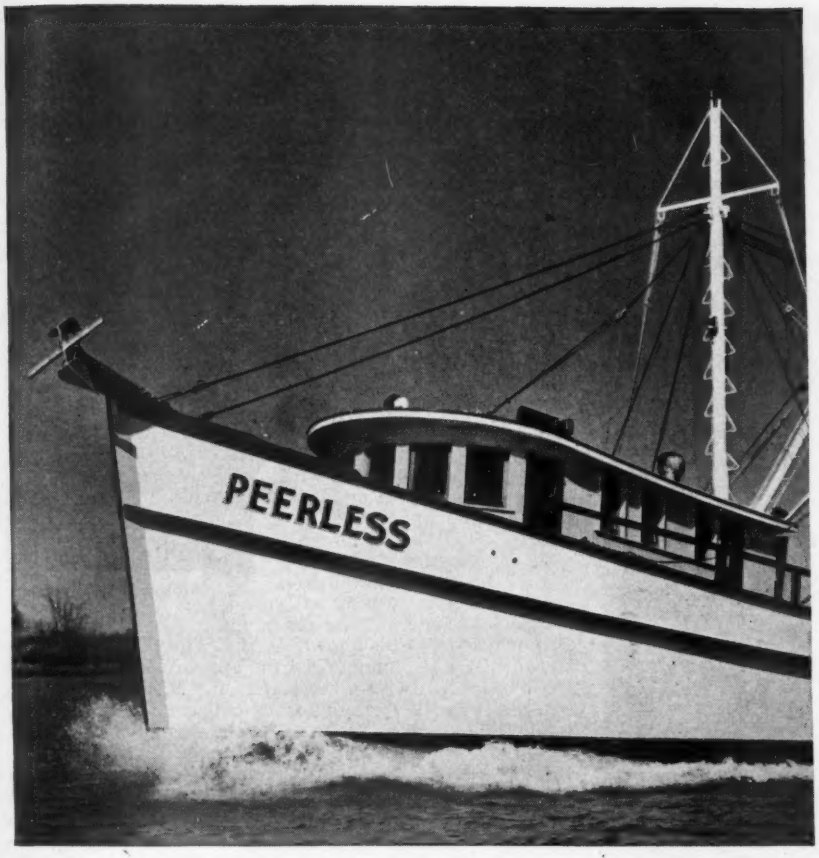
Tests were made with various temporary lighting and electrical guiding arrangements. These tests indicated that both lighting and electrical guiding were necessary to lead fish into the pump intake. Without the light, fish were not attracted to the electrical field.

With the light on but with no electrical field applied, most of the fish that had been attracted to the light were able to escape. The water current near the intake was not so swift as to sweep a large number of fish involuntarily into the pump. On the contrary, when the fish felt the water current, most of them were able to swim against it.

After these preliminary gear tests had been made, the arrangement of lighting and electrodes was designed as shown in Figure 1. Four carbon plates 12¼" x 6¼" x ¼" were used as the positive electrode (anode). It was necessary to use carbon because the metals tested, including stainless steel, were rapidly disintegrated by electrolysis. Stainless steel, however, was found to be a suitable material for the negative electrode (cathode).

The anode assembly consisted of a funnel-shaped wooden box inside which the carbon plates were fastened. The small end of the funnel was attached to the intake hose of the pump (Figure 1). Wires from the positive pole of the direct current generator were connected to the plates by brass bolts extending through the sides of the funnel. These bolts also held the plates in position.

The cathode was made of a 36-in. diameter disc of stain-



FOR DEPENDABLE
POWER TRANSMISSION
PEERLESS
HAS A
TOBIN BRONZE
SHAFT

PEERLESS is the 200th vessel built by Conrad Industries, Morgan City, La. This new, 38-ton shrimper is 75′ long, 20′ in beam, and draws 7½′.

Her owners can look forward to long years of dependable service from her 3-inch Tobin Bronze* propeller shaft. It will resist corrosion . . . it's strong and tough, yet has enough "give" to take sudden shocks. It's the oldest member of the Anaconda family of marine metals. Others are Tempaloy* shafting for high-speed, heavy-duty service . . . Everdur* alloys for fastenings and fittings . . . and ANACONDA Copper exhaust tube. *The American Brass Company,* Waterbury 20, Conn. In Canada: *Anaconda American Brass Ltd., New Toronto, Ontario.*

*Reg. U. S. Pat. Off. 55123

the mark of quality shafting for 70 years

ANACONDA®
MARINE BRASS AND BRONZE

less-steel wire screen. This screen, which had 20 wires per inch, was supported by a stainless-steel rod of ¼-inch diameter soldered around the circumference of the disc and by two 36-inch lengths of the rod soldered across the surface of the disc perpendicular to each other. Wires from the negative pole of the generator were attached at intervals around the edges of the cathode as shown in Figure 1.

The anode assembly was mounted in a fixed position at one end of a 2" x 4" wooden support, as can be seen in the accompanying drawing. The distance between the anode and the cathode could be adjusted from 0 to 10 feet by securing the cathode at various positions along the support. Lights also could be fastened to the support at any position along its length.

Welding Machine Furnishes Power

Power for electrical attraction was supplied by a 600-ampere d.c. welding machine. This machine was of a combination motor-generator type. It was driven by one of the ship's 220-volt, 3-phase, 30 kilowatt generators.

An electronic pulse generator was connected to the field circuit of the welding machine to produce a pulsating field. The pulse generator was operated by 110 volts a.c. from the auxiliary generator of the vessel and by 150 volts d.c. from the exciter of the welding machine. The rate of the pulsations could be varied from 3 to 13 per second, and the average current could be varied from 0 to about 600 amperes. This machine was never run at full capacity, however, owing to the high resistance at the anode and to the inability of the auxiliary generator to produce sufficient power. No provision was made for separating the pulses. Therefore, each pulse built up immediately after the preceding one dropped to zero current.

The above described method of electronically controlling the field was used to avoid the necessity of controlling and interrupting a high-intensity direct current mechanically, which would require expensive equipment.

New Jersey Spring Shad Run Delayed by Cold Weather

An unusually chilly Spring was blamed by Hudson River shad fishermen for the late spawning run of the silver-sided fish. Shad catches during the Lenten season were running about one-third lighter than normal at that time of year.

William F. Ingold, a veteran of a quarter-century of shad fishing, who has three "fences" of nets strung out in the Hudson off the New Jersey shore, attributes the lateness of the shad run to the unseasonable snow storms, which kept the Hudson's waters cold, and a persistent easterly wind. The only consolation in the scarcity, Mr. Ingold said, is that it has kept the wholesale price higher than in other years.

Shad fishermen whose nets are in New York waters farther up the Hudson, have an advantage over the Jersey crews. They can sell the striped bass that are caught in their nets, while New Jersey law prohibits the sale of "stripers" pulled from the nets in the Jersey waters of the Hudson.

Clam Ban Lifted Near Dennis Creek

Joseph E. McLean, New Jersey Commissioner of Conservation and Economic Development, on April 9 issued an order to permit taking of clams in a small area of the Delaware Bay off the west shore of Cape May County. The new order amended one issued March 31 prohibiting taking of any shellfish from the Delaware River, Delaware Bay and tributaries. The original order was issued to protect natural oyster seed beds.

The amendment allows taking of clams in an area 2,000 ft. south-southwest of Gus's Beach, north to the Dennis Creek rear range light and then south to Brandywine Lighthouse.

EQUIPMENT and SUPPLY NEWS

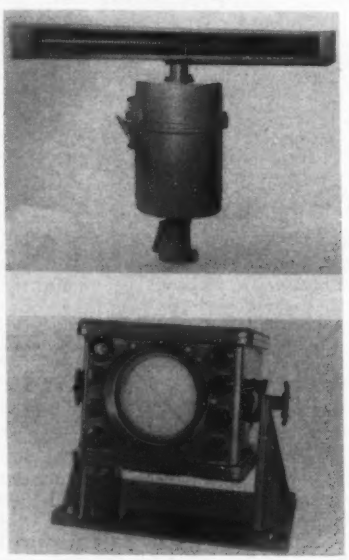
Medical Chest for Fishing Boats

A low-cost medical emergency chest designed especially for the smaller-size commercial fishing vessel has been introduced by Marine Medical Supply, Vicksburg, Mich. Known as "The Corpsman", the chest is outfitted with drugs, instruments and surgical supplies in accordance with latest revised listings of the U. S. Public Health Service, and contains those items necessary to carry out radio medical instructions.

Marine Medical Supply also offers the "Ship's Surgeon" and "Utility" models—larger and more complete chests suitable for long voyages or in waters where medical assistance is not available. The firm carries a complete line of pharmaceuticals and biologicals, instruments, surgical supplies, etc., especially designed and packed for shipboard use.

Edo Introduces Radar for Small Craft

A high-performance marine radar especially designed for small craft with limited space and generator capacity, has been put on the market by the Edo Corporation, College Point, L. I., N. Y. Priced in the low-cost bracket, the new Edo radar has exclusive, patented, slotted waveguide antenna, four feet in length, which reduces side lobe reflections. This unique antenna cuts down windage and is impervious to weather.



Two main units of new Edo radar for small boats, including patented, slotted waveguide antenna (top photo). Transmitting unit is mounted in watertight housing directly under the antenna to reduce power loss. The viewing unit is shown in the lower photo.

Operating on a wave length of 3.2 centimeters (X-band), Edo radar provides clear, precise definition of shore line, buoys, boats or other hazards on five scales—1, 2, 5, 10 or 20 miles—and shows objects as close as 25 yards. Bearing and range accuracy is rated at plus or minus 2%. On the 2-mile range two objects on the same bearing may be differentiated if they differ in range by as little as 30 yards.

The PPI unit can be mounted, for greatest convenience, on bulkhead, desk or overhead, and can be fitted with hood for viewing under bright-light conditions. The display is presented on a long-intensity cathode ray tube, 7" in diameter. An illuminated bearing scale, calibrated to every degree, zero to 180° to zero is mounted around the edge of the tube.

Power supply, receiver and distribution unit can be mounted in any convenient location. Like the antenna and PPI, the power unit is housed in a rugged, cast aluminum, watertight case. Power input into the equipment is 375 watts, and the motor generator with voltage regulation circuit operates at either 115V AC or 32V, 110V or 220V DC input. Use of the radar causes no interference with other electronic navigation devices carried aboard.

White Motor Company Acquires National Supply Engine Division

William F. Burrows

The White Motor Co. of Cleveland, Ohio, a large producer of trucks and tractors, has acquired the Engine Division of the National Supply Co. in Springfield, Ohio, which manufactures Superior and Atlas Diesels. In commenting on the new development, Robert F. Black, president of White Motor Co., stated: "The acquisition is in keeping with White Motor's program of expanding into lines which are closely allied to its present field of operations."

Mr. Black announced the acquisition is in keeping with Burrows as general manager of the newly-acquired division which is to be known as the White Diesel Engine Division. He also announced the appointment of William H. Johnson as division controller, and R. E. Lavery who will assist in the formulation of policies and procedures.

For several years, White's Cleveland engineering facilities, under the direction of Mr. Burrows, has been conducting a Diesel engine research and development program for marine applications. Now, from the new base in Springfield, Ohio, the Company intends to expand this work.

The White Diesel Engine Division sales force will operate from the Springfield plant, and supervision and operation of other departments will be centered there. The Division is immediately expanding its efforts in field contacts and its sales and service organizations.

Pamphlet on General Motors Diesels

A new brochure covering the advantages of Diesel power in workboats has been published by the Detroit Diesel Engine Division of General Motors Corp., Detroit 28, Michigan. The booklet also covers the characteristics of GM Diesel marine engine models and their adaptability to various type hulls; defines such terms as "pitch" and "slippage"; and discusses the factors involved in selecting the correct propeller for most types of boats.

Caterpillar Introduces New Diesel

A completely new 5¾" bore x 8" stroke, 6-cylinder Diesel has been announced by Caterpillar Tractor Co., Peoria 8, Ill. Known as the Cat D342, the engine is rated 190 hp. at 1200 rpm. for intermittent duty, and replaces the Cat D13000.

The more compact, modern design of the D342 presents a clean, easily-maintained unit composed of many parts already standard in all of the Company's 5¾" bore engines. Valves, valve springs, valve rotators, valve seat inserts and piston assemblies on the new unit fit a wide variety of Caterpillar engines.

Other features of the D342 include a new, larger capacity water pump; and placing of lines and tubes inside the block for better appearance. Three starting systems are available on the engine as attachments. These are: air, direct electric and gasoline. Electric starting for the gasoline starting engine is also available.

The D342 is equipped with the simplified fuel injection

system which is featured on all Caterpillar Diesels. Each injection valve is a small capsule that allows easy, inexpensive replacement. Its large, single orifice combined with a precombustion chamber affords foul-free operation on inexpensive, non-premium fuels.

Simple design and construction are combined to give a maintenance-free governor with 10% speed regulation throughout the entire range of the engine. Pistons, rings and rods are identical to those used in Caterpillar V-type engines. Heat plugs, chrome-faced rings and cast iron top ring bands are features built in for trouble-free operation.

Simplified Fuel System for P&H Diesels

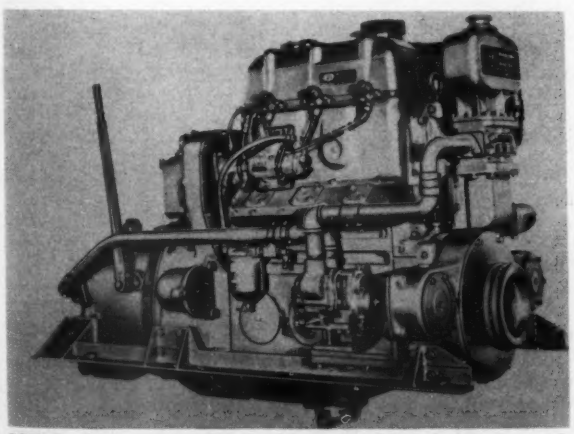
An entirely new fuel system designed around the Roosa-Master pump is now standard equipment on all Diesels being produced by Harnischfeger Corp., Crystal Lake, Ill. The new fuel system does away with a total of 131 separate parts and is 49.5 lbs. lighter in weight. It is claimed to be far easier to understand, and requires less maintenance than the former system.

Easier starting with injection automatically retarded until engine speed reaches 500 rpm., is a feature of the system. Injection is then gradually advanced, matching the increased operating speeds. This is claimed to result in extremely fine idling characteristics as well as over-all smoother operation and a more responsive engine over the entire speed range. Engine torque characteristics also are further improved.

Described as a single-cylinder, opposed-plunger, inlet-metering, distributor-type pump, it is a sealed and fully self-contained unit. It incorporates a built-in vane-type fuel transfer pump, governor, injection rotor with plungers and metering valve and distributor head. The pump is self-lubricating and has no ball bearings, no operating valves, no gears.

Premium lightweight fuels are not required in P&H Diesels with the new pump and injection system, which operate on any type fuel that will flow. Fuel calibration is inherent in the pump's design, and it is impossible to exceed maximum fuel quantity needed. Another reason for increased economy is the sharp cutoff of injection. With this positive cutoff, pressure is instantly reduced to zero. There is no "dribble" of fuel and consequently, no excessive carbon build-up on injector tips and resultant clogging; for the same reason, smoke is absent.

The Roosa-Master pump, without use of any external cams or valves, eliminates separate pumps for each cylinder and individual adjustments ordinarily required to time and balance the load of each cylinder. Also eliminated is a complex system of links, gears, racks, and cams. There is only one adjustment in the new system, which is tamperproof and set for the individual application of the engine.



P&H 3-cylinder marine Diesel, showing simplified fuel system with single fuel pump. The new system does away with a total of 131 separate parts and is 49.5 lbs. lighter in weight. Easier starting with injection automatically retarded until engine speed reaches 500 rpm., is a feature.

Harold Hansen (left) beside Olympic trawl cable meter aboard Seattle, Wash. dragger "Mitkof", with Capt. Ivan Angell at right.

Olympic Offers New Trawl Cable Meter

Olympic Instrument Laboratories of Cove, Wash., has developed a cable meter which eliminates the marking of trawl cables. Tests observed by Washington State Bureau of Fisheries' scientists aboard draggers in Puget Sound and off the Pacific Coast of Washington showed the meters to be accurate and convenient.

Olympic Model 685-3 trawl cable meter.

The Olympic meters afford a continuous and accurate measurement of trawl cable run out, and they subtract as the cable is winched in. It is claimed that changes in cable length due to stretching or repairing of the cables while at sea offer no problem to a dragger using trawl cable meters. The meters are particularly helpful under night dragging conditions, with the addition of a flashlight which can be readily attached to them. In case a boat using wire markers encounters cable trouble while dragging, it is possible for the crew to re-mark the cables at sea by using only one meter.

During tests conducted by the dragger *Mitkof* of Seattle, Capt. Ivan Angell, the craft had 400 fathoms of 5/8" cable out when her trawl became fouled by another vessel passing too close astern of her. This caused one of the doors to dig into the bottom and the cable was strained so severely that it was found to be 6 fathoms longer than the mating cable when the gear was hauled aboard. The pair of Olympic trawl cable meters which were aboard for tests enabled the *Mitkof* to immediately resume dragging operations and make a profitable trip, instead of returning to port and re-marking the entire trawl cable.

Fish Tag Taken from Canned Salmon

T. A. Thornton of Belthorn, England, recently forwarded to the Pacific Biological Station of the Fisheries Research Board of Canada a tag which he found in a tin of canned salmon. The tag was used on a pink salmon that was tagged during 1953 in Johnstone Strait.

Lathrop

MYSTIC, CONN.

3 WAYS TO HELP YOU CHOOSE THE RIGHT ENGINE

• Talk to a Lathrop owner • Take the wheel of a Lathrop powered boat • Send for the illustrated Lathrop catalog • All three will demonstrate the famous dependability, low maintenance and long life features of Lathrop engines — since 1897.

HIGH SPEED

Model	HP.	R.P.M.	Cyl.	Displ.
LH-4	45	2800	4	133
LH-Master	70	2500	4	214
LH-6	64	2200	6	282
LH-Atom	90	3000	6	282
LH-Atom Special	100	3000	6	282
LH-Deluxe	120	3000	6	320
LH-Super	132	3000	6	339
LH-Super Special	145	3000	6	339

DIESELS

Model	HP.	R.P.M.	Cyl.	Displ.
D-60	60	900	4	665
D-100	100	1000	6	998
DH-120	120	1100	6	998
DH-200	187	1600	6	935

SLOW SPEED

Model	HP.	R.P.M.	Cyl.	Displ.
Engineers' 60	60	875	4	665
Engineers' 75	75	915	4	792
Engineers' 115	118	1000	6	1188
Standard 30	30	660	3	463
Standard 40	45	710	4	618

MEDIUM SPEED

Model	HP.	R.P.M.	Cyl.	Displ.
Mystic 125	130	1800	6	585
Mystic 175	175	1535	6	1013

Write today for illustrated catalogs with complete and detailed information.

The CRUISE MASTER

An Ideal Compass for smaller boats

4" Spherical

Indirect Lighting

Built-in Compensator

Chrome Plated Base

Price $39.00

For Larger Boats Get Our

6-inch FLOAT TYPE COMPASS

Quality Instruments You Can Depend On

Compasses - Course Protractors - Binnacles - Peloruses

Write for descriptive folder

MARINE COMPASS COMPANY

Pembroke, Massachusetts

H. H. Warren, former assistant manager of the New York branch sales office of The Electric Storage Battery Co., has been appointed assistant sales manager of the firm's Exide Industrial Division with headquarters in the general offices at Philadelphia. Associated with the Company in New York since 1921, Warren started as a battery assembler.

Socony Develops New Lubricating Oil

Development of a new cylinder oil enabling more economical operation of Diesel engines has been announced by Socony-Vacuum Oil Co., Inc. It is to be marketed under the name Gargoyle D.T.E. Marine Oil S-250.

C. E. Habermann of New York, under whose direction the new product was developed, pointed out that the new oil's efficiency in reducing cylinder-liner wear "is documented in detail by complete engineering data." He disclosed that the oil has been tried and tested aboard a variety of motorships under actual operating conditions totaling more than 50,000 hours.

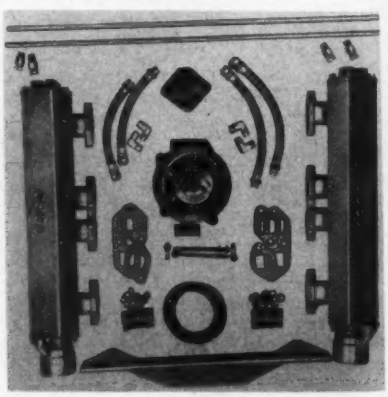
Socony-Vacuum's research laboratories, using radioactive tracers, discovered that wear-rate among engines using less-expensive, boiler-type fuels was two to three times greater than normal, and that cylinder-liner replacements were eating into fuel savings realized. Subsequent tests on effects of cylinder-wall temperature and other related factors showed that corrosive sulfur acids were responsible for the damage. Later studies led Socony-Vacuum to decide that the effects of sulfur acids best could be controlled by lubricating oil containing neutralizing additives.

The new Socony-Vacuum lubricating oil is manufactured from high-quality solvent-refined naphthenic stocks. The "S-2" portion of the brand number indicates the oil as being of Series-2 detergency level. The latter numbers show a viscosity grade of SAE 50.

New Osco Conversion Kit for Ford Engines

Newest of Osco's Convo line of marine conversion kit assemblies is the low-priced JGH8 parts group, for installation on Ford V8 overhead valve engines. This kit features a full ball-bearing Monopump cooling water supply which guarantees uniformity of circulation through built-in "thermal well". Traditional Circuit-Flo manifolds are high ported.

New reversing gear assemblies feature integral flywheel housing, lube-level indicator and high starting motor flange. The JGH8 Convo kit is manufactured for use with the Ford overhead valve V8 engines of 239, 254, 272 and 292 (Thunderbird) cubic inches.



Osco JGH8 marine conversion kit for installation on Ford V8 overhead valve engines. The kit includes full ball-bearing Monopump cooling water supply which guarantees uniformity of circulation through built-in "thermal well".

Yetter Named Twin Disc Sales Manager

Jack N. Yetter

The appointment of Jack N. Yetter as sales manager of its General Products Division has been announced by Twin Disc Clutch Co., Racine, Wisc. Mr. Yetter is filling the spot recently vacated due to the retirement of E. C. (Ted) Billings, who has been associated with Twin Disc in an executive sales capacity for 20 years. Mr. Billings will continue to act in a consulting capacity.

Yetter has been associated with Twin Disc Clutch Co. for the past six years, beginning as a district sales engineer in the Tulsa office in 1949. He became district sales manager of the Tulsa office in 1950 and moved to Racine, Wisc. as sales promotion manager in 1953, before being promoted to his present assignment.

Yetter graduated from Texas A & M in 1942 with a degree in Engineering. He served three and a half years with the Air Force as aeronautical engineer, pilot and squadron operations officer.

Cummins Opens North Carolina Office

Expansion of the Cummins regional organization and promotion of several company officials has been announced by Cummins Engine Co., Inc., of Columbus, Indiana. The firm has opened a new Piedmont Regional Office at Greensboro, N. C. In charge of the Region, which consists of the States of Virginia, West Virginia, North and South Carolina, is R. R. MacDonald, whose headquarters in Greensboro will be at 601 North Elm St. Previous to his latest appointment, Mr. MacDonald was manager of the Cummins Diesel Sales Corp. branch at Milwaukee, Wis.

Cummins has promoted Loyd E. Williams to Manager-Distribution, in which position he will be in charge of the operation of the Company's 12 regional offices, and the handling of domestic distributor activities. He succeeds Paul J. Every, who has been named General Sales Manager. Mr. Williams had been Rocky Mountain Regional Manager for Cummins since March, 1950.

Also promoted by Cummins were E. D. Tull, who is now executive vice president; R. B. Stoner, vice president—personnel; and C. R. Boll, vice president—sales.

Handing Edward L. (Colonel) Story, center, a contract which appointed him Cummins distributor at Charlotte, N. C., is Paul J. Every, general sales manager, Cummins Engine Co., Inc., Columbus, Indiana. Watching the proceedings is Loyd E. Williams, left, who recently was named Cummins' manager-distribution. Colonel Story is president of the new distributorship, known as Cummins Carolina Diesel, Inc., and his territory consists of the entire State of South Carolina and the southwestern portion of North Carolina.

500 Trawlers CAN'T be Wrong

Last year, Diesel Engine Sales, Inc., of St. Augustine chose the name GOODWILL for the bow of their 500th shrimp trawler. And they chose a

*Columbian

for her stern, as they had for each of her 499 older sisters (and of course for all those that have come off their ways since) . . . We like the symbolism: GOODWILL forward, COLUMBIAN PROPELLERS aft—they *do* go together! *Ask for our free Catalog, and learn some of the reasons why.*

**For the GOODWILL, a 5-BLADER, 48 x 44*

COLUMBIAN BRONZE CORPORATION
FREEPORT, L. I., N. Y.

MUSTAD
Key Brand FISH HOOKS

These widely known and used fish hooks have been the choice of experienced fishermen for several generations. Try them. They will save you fish and fish hook replacements and repairs.

9395 MUSTAD-HALIBUT

O. MUSTAD & SON
Established 1832
OSLO NORWAY

Sales Agents
Ed. W. Simon Co., Inc.
320 Broadway, New York

31000 MUSTAD-LIMERICK

9353 MUSTAD-GRAVITATION

KERMATH'S NEW LOOK 3 NEW ENGINES

1. ☐ **95 H.P. SEA-PRINCE**
Heavy-duty Capital Gear—Seven main bearings—2⅞ inches shorter

2. ☐ **105 H.P. SEA-PRINCE (Special)**
Both above models designed to fit most engine beds—22½" centers—40" length

3. ☐ **145 H.P. SEA-ROVER (Special)**

2 NEW VERSIONS

1. ☐ **5 H.P. SEA-PUP**

2. ☐ **10 H.P. SEA-TWIN**
New heavy-duty magneto—Slow speed accessible water pump—smoother operation

Popular Auxiliary Power

Complete line 5 to 580 H.P., Gasoline or Diesel

GASOLINE

	MODEL	H.P.	CYLS.
☐	SEA-CUB	25 H.P.	4
☐	SEA-JEEP	61 H.P.	4
☐	SEA-ROVER	130 H.P.	6
☐	SEA-MATE (Spec.)	160 H.P.	6
☐	SEA-FARER	225 H.P.	6
☐	SEA-RAIDER	280 H.P.	6
☐	SEA-RAIDER	580 H.P.	12

DIESEL

☐	2-127	27 H.P.	2
☐	4-226	60 H.P.	4
☐	6-298	75 H.P.	6
☐	6-529	130 H.P.	6
☐	6-935	250 H.P.	6
☐	HYDROJET	61 H.P.	4

KERMATH MANUFACTURING CO., Detroit 8, Michigan
☐ Individual ☐ Dealer
Please send detailed literature as checked.
Name.....
Street.....
City.....Zone.....State.....

DO THIS NOW!

KERMATH MANUFACTURING COMPANY
5890 Commonwealth Avenue
DETROIT 8, MICHIGAN
Canadian Plant: Kermath (Canada) Ltd.
619 King St., W., Toronto 2, Ontario

ONE OF THE 16 INTEGRATED COMPANIES
BARIUM STEEL CORPORATION

BOAT CATCHES

For Month of April

Hailing fares. Figure after name indicates number of trips.

STONINGTON, CONN.

America (2)	1,500	Jane Dore (9)	8,300
Averio (8)	4,300	Lisboa (1)	1,000
Bette Ann (8)	9,200	Little Chief (10)	7,900
Carl J. (2)	2,000	Marise (12)	9,300
Carol & Dennis (1)	500	Mary H. (8)	4,200
Carolyn & Gary (12)	18,400	Old Mystic (9)	26,700
Connie M. (6)	6,200	Our Gang (1)	900
Fairweather (6)	7,000	Pvt. Frank Kessler (1)	800
Five Sisters (2)	800	Theresa (2)	6,400
Irene & Walter (13)	20,100	William B. (9)	11,300

NEW BEDFORD

Adventurer (3)	67,800	Julia DaCruz (1)	12,000
Annie Louise (3)	23,000		
Annie M. Jackson (1)	41,500	Kelbarsam (1)	6,500
Arnold (2)	15,200		
Arthur L. (2)	27,800	Little Sam (1)	19,000
Austin W. (2)	37,000	Lorine III (2)	33,000
Barbara M. (2)	28,600	Mary Tapper (3)	71,600
Bozo (2)	7,300	Molly & Jane (1)	15,400
Carl Henry (2)	48,000	Nautilus (3)	75,700
Charles E. Beckman (3)	38,300	Noreen (3)	93,500
Charlotte G. (1)	17,300		
Christina J. (3)	55,500	Pauline H. (3)	309,900
Christine & Dan (3)	40,000	Phyllis J. (3)	36,400
Connie R. (3)	112,100		
		Roann (3)	56,500
Dauntless (3)	45,000	Roberta Ann (1)	1,700
Driftwood (2)	8,700	Rosemarie V. (1)	39,300
Elva & Estelle (3)	37,300	Shannon (3)	45,600
Eugene & Rose (2)	43,000	Silver Mink (1)	17,200
		Solveig J. (3)	155,700
Gannet (3)	96,600	Sonya (3)	37,500
Gertrude D. (1)	12,000	Stanley B. Butler (3)	243,900
Gladys & Mary (3)	133,800	Sunbeam (3)	75,000
Growler (3)	86,500	Susie O. Carver (2)	21,500
Harmony (3)	49,000	Teresa & Jean (3)	89,500
Hope II (3)	59,600	Two Brothers (1)	5,800
Huntington Sanford (3)	41,600		
		Venture I (4)	163,600
Invader (3)	112,100	Victor Johnson (3)	78,000
Ivanhoe (1)	33,300	Viking (3)	88,900
Jacintha (3)	108,100	Whaler (3)	103,000
Joan & Tom (2)	17,200		

Scallop Landings (Lbs.)

Agda (1)	6,300	Lauren Fay (2)	22,000
Aloha (2)	21,800	Linda & Warren (1)	6,500
Alpar (2)	19,000	Linus S. Eldridge (3)	25,000
Amelia (3)	32,000	Louis A. Thebaud (3)	25,700
Antonia (1)	2,000	Louise (3)	33,000
Antonina (1)	9,000	Lubenray (2)	18,000
Babe Sears (2)	21,300	Major J. Casey (2)	18,200
Barbara (2)	15,000	Malene & Marie (2)	19,000
Bobby & Harvey (2)	22,000	Marmax (2)	21,500
Bright Star (3)	21,200	Martha E. Murley (2)	15,000
		Mary Anne (2)	21,800
Camden (2)	21,800	Mary J. Hayes (1)	10,000
Cap'n Bill (1)	8,500	Monte Carlo (2)	19,500
Caracara (2)	22,000	Moonlight (2)	21,000
Carol & Estelle (3)	32,400		
Caroline & Priscilla (1)	11,000	Nancy Jane (2)	20,000
Catherine & Mary (1)	11,000	Nellie Pet (3)	32,000
Chas. S. Ashley (2)	16,000	New Bedford (2)	21,600
		Newfoundland (2)	17,000
Dartmouth (1)	11,000		
Debbie Jo-Ann (2)	22,000	Pearl Harbor (2)	12,800
Dorothy & Mary (3)	16,000	Pelican (2)	21,000
		Porpoise (2)	22,000
Eleanor & Elsie (2)	20,400		
Empress (1)	10,500	Rush (2)	22,000
Ethel C. (2)	21,500	Ruth Moses (2)	20,800
Eurice-Lilian (3)	33,000		
		Sea Hawk (2)	21,800
Fairhaven (2)	22,000	Sea Ranger (2)	22,000
Falcon (2)	22,000	Smilyn (1)	11,000
Fleetwing (2)	19,600		
		Ursula M. Norton (2)	22,000
Janet & Jean (2)	21,000		
Jean & Ann (2)	18,300	Vivian Fay (3)	30,500
Jerry & Jimmy (2)	21,300		
John G. Murley (2)	22,000	Wamsutta (2)	17,000
Josephine & Mary (1)	9,000	William D. Eldridge (2)	18,000
		William H. Killigrew (2)	22,000
Kingfisher (2)	22,000		

GLOUCESTER

Alden (5)	139,000	Margie L. (10)	19,000
Althea Joyce (2)	41,000	Maria Immaculata (5)	21,000
American Eagle (3)	50,000	Maris Stella (2)	140,000
Angie & Florence (1)	3,000	Mary (6)	11,500
Anna Guarino (6)	14,500	Mary Ann (6)	73,000
Ann & Marie (3)	5,000	Mary E. (6)	14,000
Annie (10)	18,700	Mary Rose (1)	170,000
Annie & Josie (5)	10,000	Minkette I (3)	4,000
Anthony & Josephine (2)	5,000	Mother Ann (1)	240,000
Ave Maria (1)	22,000		
		Natale III (5)	115,000
Baby Rose (1)	105,000	No More (6)	9,000
Bonaventure (2)	205,000	Nova Luna (4)	3,500
Bonnie Billow (1)	160,000	Novelty (3)	3,500
California (1)	15,000	Ocean Clipper (1)	15,000
Carlannsul (1)	1,500	Ocean Wave (4)	207,000
Carlo & Vince (7)	57,500	Our Lady of Fatima (2)	337,000
Carol Jean (4)	54,000		
Catherine (3)	2,500	Peggy Belle (3)	1,500
Catherine B. (4)	163,000	Philip & Grace (2)	175,000
Columbia (2)	152,000	Pilgrim (1)	130,000
Curlew (2)	265,000	Pilhasca (5)	21,500
		Pioneer (7)	9,000
Dawn (9)	13,500	Priscilla (2)	2,000
Dolphin (4)	250,000	Puritan (1)	90,500
Doris F. Amero (3)	125,000		
		Rodman Swift (5)	4,500
Eagle (2)	273,500	Roma (1)	1,500
Emily H. Brown (1)	160,000	Rose & Lucy (4)	64,000
Estrela (1)	190,000	Rosemarie (3)	50,000
Eva M. Martin (1)	1,000	Rosie (1)	5,000
Eva II (8)	15,000	Rosie & Gracie (5)	64,000
Evelyn H. Brown (1)	290,000		
		St. Anthony (2)	179,000
Falcon (12)	26,500	St. Cabrini (4)	85,000
Florence & Lee (2)	380,000	St. Francis (7)	15,000
Flow (1)	270,000	St. John (5)	9,500
Frances R. (8)	85,500	St. Joseph (2)	69,500
Francis L. MacPherson (2)	146,000	St. Mary (11)	106,500
Frankie & Jeanne (3)	3,500	St. Nicholas (2)	315,000
		St. Peter (4)	84,500
Gaetano S. (2)	94,000	St. Peter II (1)	119,000
Gertrude E. (2)	3,500	St. Providenza (6)	8,000
Giacoma (9)	16,000	St. Rosalie (3)	48,000
		St. Stephen (1)	4,500
Helen B. (4)	50,500	St. Terese (5)	45,000
Helen M. (1)	22,000	St. Victoria (4)	258,500
Hilda Garston (1)	140,000	Salvatore & Grace (5)	181,500
Holy Family (2)	310,000	Santa Lucia (3)	3,500
Holy Name (6)	57,000	Santa Maria (1)	10,000
		Sebastiana C. (5)	175,500
Ida & Joseph (4)	217,000	Serafina N. (7)	63,500
Immaculate Conception (6)	45,000	Serafina II (5)	98,000
Irma Virginia (6)	9,500	Sister Ann (1)	164,000
		Star of the Sea (3)	139,000
Jackie B. (3)	69,000	Sunlight (1)	165,000
Jackson & Arthur (4)	11,000	Sylvester F. Whalen (1)	160,000
Jennie & Lucia (3)	141,000		
Joseph & Lucia (1)	115,000	Theresa M. Boudreau (1)	210,000
Josie II (7)	16,000	Tipsy Parson (4)	6,000
Judith Lee Rose (2)	620,000		
		Veronica N. (3)	8,500
Killarney (1)	70,000	Victoria (4)	4,500
Kingfisher (1)	205,000	Villanova (2)	465,000
		Vincie N. (1)	25,000
Linda B. (11)	20,700	Virginia Ann (5)	38,000
Little Flower (5)	51,000		
Little Joe (2)	7,000	We Three (4)	15,500
Lone Ranger (9)	12,000	White Owl (6)	11,500
Lucy Scola (10)	15,500	Wild Duck (1)	107,000
Margaret Marie (6)	30,000		

Scallop Landings (Lbs.)

Abram H. (1)	10,000	Brother Joe (1)	3,800
B. Estelle Burke (2)	21,000	Cap'n Bill (1)	4,500

ROCKLAND

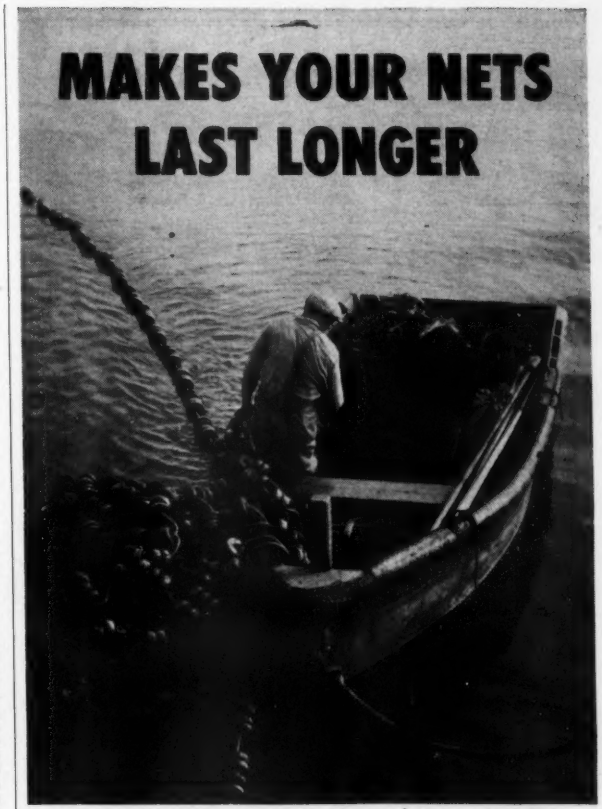
Araho (1)	110,000	Little Growler (1)	5,000
Calm (2)	460,000	Mabel & Susan (3)	55,700
Dorothy & Betty (3)	56,000	Rhode Island (1)	39,000
Drift (1)	75,000	Squall (2)	510,000
Elin B. (3)	41,000	Storm (2)	170,000
Flo (1)	28,000	Tide (2)	290,000
Helen Mae II (2)	12,300	Wave (2)	320,000
Jeanne D'Arc (3)	140,000		

WOODS HOLE

Arnold (1)	2,500	Papoose (2)	6,600
Cap'n Bill (1)	6,800	Patsy (1)	1,900
Cap'n Bill II (2)	43,200	Priscilla V. (2)	42,200
Driftwood (2)	3,500	Reliance (1)	600
Ebenezer (1)	2,700	Sea Buddy (1)	1,900
Eugene H. (1)	15,800	Southern Cross (4)	15,100
Eva Beal (1)	3,800	Three Bells (1)	4,300
Helen Mae (1)	1,200	Viking (1)	600
Madeline (1)	4,000	Winifred M. (2)	3,400
Morning Star (2)	3,500		

Scallop Landings (Lbs.)

Elizabeth M. (1)	10,125	Palestine (1)	9,566
Janet & Jean (1)	1,229		



INTERNATIONAL NET DIPS protect nets most effectively. They come ready-to-use, require no heating nor special equipment for application, and are quick drying.

INTERTOX NET DIP #1699 is an inexpensive homogeneous mixture with toxic properties which penetrate completely into the innermost fibres of cotton and linen netting, protecting them from the destructive action of the organisms that cause cordage rot.

G. M. FISHING NET COPPER PAINT #1866 is higher in cost due to the anti-fouling element. Will not injure netting nor cause undue stiffness. Assures protection from fouling much longer than ordinary materials.

The cost of nets is such an appreciable part of the cost of fishing, that materially prolonging the life of nets is of utmost importance to the fisherman. Write today for particulars about these net dips.

International MARINE PAINTS

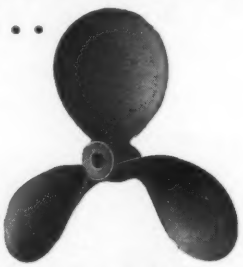
International NET DIPS

International Paint Company, Inc.
21 West Street, New York 6, N. Y.
So. Linden Avenue, So. San Francisco, Calif.
1145 Annunciation Street, New Orleans, La.

International Paints (Canada) Ltd.
6700 Park Avenue, Montreal, Quebec
105 West, 2nd Avenue, Vancouver, B. C.

WORLD'S LARGEST MARINE PAINT MAKERS

EXPERT RECONDITIONING ON PROPELLERS OF ALL SIZES . . .



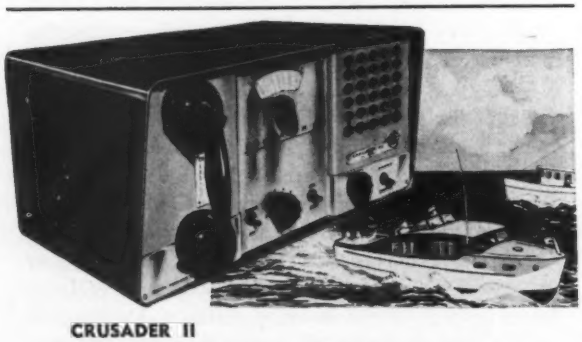
PRECISION EQUIPMENT and expert workmen insure an accurate repair job. We guarantee our work. Estimates gladly furnished. Send your damaged propeller to us for free inspection and report.

HYDE WINDLASS COMPANY

BATH, MAINE

HYDE

PROPELLERS



CRUSADER II

MORE WATTS PER DOLLAR!

Dollar for Dollar, you get more with HUDSON AMERICAN

- Compare Hudson American's cost watt for watt with any other make. Choose from 15, 40, 65, 85, 105, 140 watt models—you get more power for every dollar with Hudson American!
- Wide choice of models—8 Ship-to-Ship, Ship-to-Shore Marine Radio Telephones—including 4 smartly designed, newly-improved models for '55.
- 4, 6, 7 channel models—4 with a standard broadcast band for entertainment.

See your local dealer, or write us for complete information.

HUDSON AMERICAN CORPORATION
A subsidiary of Claude Neon, Inc.
25 West 43rd Street, New York 36, N. Y.
Export Division: 100 East 42nd St., New York 17, N. Y.

PORTLAND, ME.

Agnes & Elizabeth (3)	187,000	John J. Nagle (2)	215,000
Alice M. Doughty (1)	32,000	Kennebec (2)	98,000
Alice M. Doughty II (2)	76,000	Lawrence Scola (2)	9,700
Andarte (2)	138,000	Marie H. (6)	22,200
Araho (2)	145,500	Mary & Helen (10)	30,300
Ariel (12)	39,300	Mascot (5)	13,000
Carmela & Louis (3)	7,600	Medan (2)	531,000
Cathy & Aldie (1)	1,000	Ocean Life (2)	675,000
Challenger (13)	30,800	St. George (1)	75,000
Courier (2)	117,000	Theresa R. (2)	157,000
Crescent (12)	36,900	Vagabond (1)	40,000
Dorothy & Ethel (3)	40,000	Vandal (4)	145,500
Dorothy & Ethel II (1)	41,000	Vida E. (3)	8,800
Elinor & Jean (3)	59,100	Vida E. II (6)	19,000
Ethelina (4)	199,600	Wawenock (1)	225,000
Gulf Stream (3)	292,000		

Scallop Landings (Lbs.)

Adele K. (2)	17,000	Rhode Island (1)	8,800
Mary & Julia (2)	19,000	Silver Bay (2)	16,300
Pocahontas (2)	21,000		

BOSTON

Acme (2)	15,900	Mary & Joan (2)	162,900
Addie Mae (1)	8,800	Michigan (2)	377,900
Agatha (3)	134,300	Mother Frances (2)	123,700
Agatha & Patricia (4)	157,600		
Alphonso (2)	8,300	Nancy B. (2)	106,200
Althea Joyce (2)	45,000	Neptune (2)	290,300
Angie & Florence (2)	44,900	Notre Dame (4)	98,500
Annie & Lucy (1)	13,300	Nova Antonio (1)	1,300
Arlington (2)	403,700		
Atlantic (2)	293,000	Ocean Clipper (2)	90,700
		Ohio (2)	279,100
Baby Rose (2)	139,600	Olympia (4)	94,400
Bay (3)	452,500	Olympia La Rosa (2)	76,200
Bonnie (2)	374,500		
Bonnie Breaker (2)	303,000	Pam Ann (2)	220,000
Bonnie Breeze (2)	342,000	Patty Jean (2)	342,900
Bonnie Lou (1)	113,500	Phantom (2)	392,000
Brighton (3)	389,500	Plymouth (2)	301,300
Buzz & Billy (3)	102,900	Princess (1)	23,800
Cambridge (2)	336,100	Racer (2)	339,300
Carmela Maria (4)	43,600	Raymonde (3)	191,000
Carol Jean (1)	25,500	Red Jacket (3)	569,700
Catherine B. (3)	16,400	Roma (1)	4,900
Comet (2)	333,100	Rosa B. (2)	343,600
		Rosalie D. Morse (2)	281,500
Elizabeth B. (3)	341,200	Rose Mary (2)	28,200
		Rosie (2)	33,000
Flying Cloud (3)	547,300	Rush (3)	477,500
Four (2)	298,500		
4-C-688 (4)	15,300	St. Anna (3)	17,100
4-H-823 (4)	17,600	St. Joseph (1)	24,700
		San Calogero (1)	16,700
Geraldine & Phyllis (3)	191,800	Sant' Antonio II (3)	22,500
		Santa Rita (4)	40,800
Helen M. (1)	21,200	Savoia (4)	30,800
		Sherry & Scott (2)	56,800
Jane B. (3)	357,500	Swallow (2)	328,100
J. B. Junior (3)	440,300		
Jennie & Lucia (1)	37,400	Texas (2)	285,400
Josephine F. (3)	20,200	Thomas D. (4)	178,900
Josephine P. II (3)	108,300	Thomas Whalen (2)	309,500
		Triton (2)	341,500
Lawrence Scola (1)	11,500		
Leonard & Nancy (2)	79,300	Villanova (2)	119,300
Lucky Star (3)	287,800		
		Weymouth (3)	434,000
Magellan (3)	54,400	Wild Duck (1)	124,000
Maine (3)	502,000	Wm. J. O'Brien (3)	425,500
Maria Christina (2)	9,700	Winchester (2)	360,000
Maria Del. S. (1)	4,100	Wisconsin (3)	466,000
Mary & Jennie (2)	1,000		

NEW YORK

Catharine C. (1)	33,000	Golden Eagle (3)	233,000
Charlotte M. (2)	169,000	Hazel B. (3)	178,500
Clipper (2)	142,000	Joseph S. Mattos (1)	75,000
Edith L. Boudreau (3)	196,200	Katie D. (1)	60,000
Evelina M. Goulart (2)	147,500	Lady of Good Voyage (3)	162,000
Felicia (2)	84,000	Tina B. (2)	158,000
Figueira Da Foz (2)	144,500		

Scallop Landings (Lbs.)

Barbara & Gail (2)	18,500	Ida K. (1)	10,800
Beatrice & Ida (2)	22,000	Maridor (1)	10,700
Carol-Jack (3)	30,700	Miriam A. (2)	21,700
Catharine C. (1)	10,800	Muskegon (2)	19,200
Clipper (2)	20,900	Norseman (2)	16,880
David A. (1)	11,000	Richard Lance (2)	20,800
Enterprise (2)	17,900	Rosalie F. (1)	9,000
Florence B. (3)	31,020	S-No. 31 (3)	32,000
Gambler (1)	9,800		

North Carolina Hard Crabs Take Lead in Production

Hard crabs led North Carolina's seafood production for the first three months of this year, while shad and herring ran a close second. Crab catchers got the highest price in history, in some instances as much as 12 cents a pound.

Production of oysters, however, was way off. Fisheries Commissioner Holland believes that in the course of time, the plan of the Conservation and Development Dept. to plant as many oysters and shells as it can will give much better production of oysters. The oyster seed planting program was begun March 21, and was to be finished in about two weeks, weather permitting.

New Plant Nearing Completion

Charles Davis, Beaufort, president of the Seashore Packing Corp., said recently that the new plant at West Beaufort was expected to be in operation about the end of this month. The two-story building, constructed at a cost of $20,000, is located east of the Fish Meal Co. on Gallants Channel. Fish products will be processed there and packed as dog and cat food.

Regulates Use of Crab Pots in Pamlico Sound

The regulation on use of crab pots in Pamlico Sound, passed by the Conservation Board at High Point recently, prohibits any person or firm from operating more than 100 pots. The regulation also prohibits use of pots from May 1 to November 1 except in the northern part of Pamlico Sound north and northeast of a line drawn from Long Shoal Light to Gull Island.

This regulation was drawn to permit shrimping operations. Crab pots in shrimping areas interfere with trawlers. The shrimp run in the upper portion of Pamlico Sound does not usually start before August. The closed season for use of crab pots is August 1 to November 1.

Cites Need for Fishermen to Organize

William H. Potter, president of Beaufort By-Products Co., told a North Carolina Fishing Assoc. regional dinner meeting of nearly 100 fishermen last month that for their own individual protection and for the continued growth of their industry, they must organize as tightly as farmers. He stated that the Association would be the fishermen's mouthpiece in legislative halls. It will endeavor to further financing of needed frozen fish plants, and will teach better packaging of fish. The group also plans to back practical scientific research designed to improve catches.

Other speakers at the meeting were Commissioner of Fisheries C. Gehrmann Holland; G. B. Talbot of the Fisheries Laboratory, Pivers Island; Carter Broad of Duke Marine Laboratory; William A. Ellison, director of the Institute of Fisheries Research; E. H. Holton, president of the N. C. Fishing Assoc.

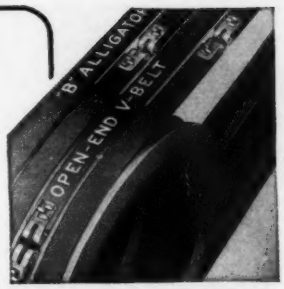
To Chart Sunken Wrecks

For the first time since before World War II, the U. S. Coast and Geodetic Survey is undertaking work to locate sunken wrecks off the North Carolina coast. Surveys will be made to determine the minimum depths over wrecks and other obstructions or to disprove the existence of wrecks and reported obstructions based on erroneous information.

Three vessels, the *Parker*, *Smirni* and *Bowen* will do the work in this area. The wire-drag operations will be done by the *Parker* and the *Bowen* which are equipped with apparatus to sweep the ocean. The *Smirni* will act as wire-drag tender and will take the soundings over the wrecks to determine the exact depth.

According to charts, there are approximately 80 wrecks or obstructions that the group will check. The total area to be covered extends to 60 miles north of Cape Hatteras and all the way down the coast to Charleston, S. C.

WHICH V-BELT is best for you?



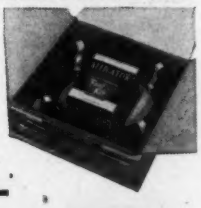
If the correct size of endless V-Belt is not readily available, or if you have to tear down machinery to install, then the best belt to use is open-end V-Belting fastened with

ALLIGATOR **V-BELT FASTENERS**

★ In this way you can make up V-Belts in *any length* to fit *any drive* the fast economical way—V-Belts that perform exceptionally well.

★ In contrast to link-type belts these ALLIGATOR fastened V-Belts have just *one* strong joint . . . *stretch and follow-up maintenance are reduced to a minimum.*

ALLIGATOR INTRODUCTORY V-BELT DRIVE UNITS



contain V-Belting, Fasteners and Tools —everything you need in one compact package to make up V-Belts quickly. Available in sizes A. B, C & D.

Ask for Bulletins V-215 and V-216
Order From Your Distributor

FLEXIBLE STEEL LACING COMPANY
4683 Lexington Street, Chicago 44, Illinois

DEPENDABLE ENTERPRISE ENGINES

STATIONARY & MARINE

HEAVY DUTY POWER

Diesel • Dual Fuel • Tri-Fuel • Spark Ignited Gas

The switch is to Enterprise
Choice of Power Experts

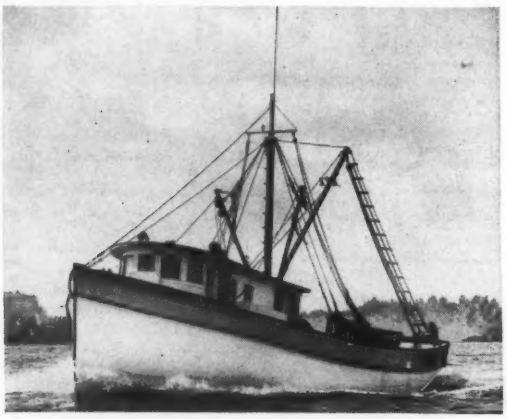
OVER A MILLION HORSEPOWER AT WORK THE WORLD OVER

Units from 73 to 6150 HP
43 to 4400 KW

Enterprise
DEPENDABLE
Engines

Sales and Service in Principal Cities

DEPENDABLE ENTERPRISE ENGINES



For Economy and All-Weather Ruggedness

50 FT. HATTERAS TRAWLER

Meets every specification you'd build into it yourself. All accessories for efficiency and convenience, with your own choice of engine and equipment. Terms. Prompt delivery. Get interesting details from:

MOREHEAD CITY SHIPBUILDING CORP.
Telephone 6-4146 Morehead City, N. C.

MAIL COUPON TODAY

MOREHEAD CITY SHIPBUILDING CORP.
Morehead City, North Carolina

Gentlemen: Without obligation on my part tell me more about your Hatteras Trawlers and their special service features.

My Name_____

St. Address_____

City_____ State_____

ELDREDGE-McINNIS, INC.
NAVAL ARCHITECTS MARINE ENGINEERS
Specializing in Fishing Vessel Design
131 State St., Boston 9, Mass.
Walter J. McInnis Alan J. McInnis

K-W BRACKETED CORSAIR

- Our most popular model for small boats
- Over 19,000 in use
- High performance at low cost
- Built-in corrector system
- Special red lighting
- Versatile mounting bracket
- Half point card also available

Send for descriptive folder.

Ask your dealer

Manufactured by
WILFRID O. WHITE & SONS, INC.
(Formerly Kelvin-White Company)
178 ATLANTIC AVE., BOSTON 10, MASS.
406 Water St., Baltimore 2, Md. 40 Water St., New York 4, N. Y.
EXPORT DEPT.: 100 E. 42nd St., New York 17. Cable: PHILYORK

Rhode Island Bill Provides For Dredging of Sea Clams

A bill halfway through the legislative mill would permit the dredging of sea clams in Rhode Island's offshore waters. The clams, while not currently a commercial crop, are believed to have potential value as a market shellfish. The dredging area would extend partly into the mouths of the Sakonnet River and the East and West passages of Narragansett Bay.

One of the most important bills in the program of Director of Agriculture and Conservation John L. Rego to tighten compliance with the shellfish laws, cleared the House on April 15. It would require all shellfish dealers to be licensed at $5 a year. The department could then revoke or suspend licenses for law violations.

Oyster Transplanting Completed

About 5,000 bushels of oysters have been transplanted from polluted waters of the Pawcatuck River to clean oyster beds of the Warren Oyster Co. at Warren. The oysters, gathered by tongers in small boats, were loaded aboard a schooner hired by the shellfish company to carry them to Warren. More than a score of boats have been working daily.

The tongers are allowed to dredge 20 bushels each per day, for which they are paid $1.50 a bushel. A conservation officer aboard the schooner kept a check on all the oysters dredged to make sure none of them found their way to market.

Striped Bass Bill Passes House

The Rhode Island House of Representatives on April 20 passed the administration's striped bass bill by an overwhelming voice vote. It now goes to the Senate. Under the bill's provisions, seiners would be prevented from fishing for stripers, but the fish could be taken by hook and line, spears and traps.

Two Representatives, opposed to passage of the bill, claimed that seiners are only a small factor in the striped bass fishery. They reported that hook-and-line sportsmen last year sold 17,000 lbs. of bass to the Point Judith Fishermen's Cooperative, while seiners sold only 7,000 lbs.

New York Project for Dredging New Fire Island Channel Postponed

Rep. Stuyvesant Wainwright's recommendation that the present Fire Island Inlet be abandoned and an artificial inlet be dredged three to five miles east of the present waterway was temporarily shelved last month. The Fire Island Inlet Committee disclosed that the present channel is adequate, and the new project has been put aside until Army Engineers complete an erosion survey of the south shore. The survey has been delayed indefinitely since the State has failed to appropriate its share of the funds.

Members of the Committee told Rep. Wainwright that the engineers had done a satisfactory job in keeping the present inlet open since the hurricanes last Fall. According to Joseph Glancy, research expert for the Bluepoints Oyster Co. at West Sayville, the bay never was in better condition.

Catching Mackerel

According to a report, the White Cap Fish Co. of Islip late in April was getting a good number of mackerel in their nets. On one occasion, some 300 pounds were brought up. The weather, however, hasn't been quite the way the fishermen would like to have it.

Massachusetts Research Vessel Exploring for Shrimp

The Fish & Wildlife Service vessel *Delaware* left Boston on April 18 to explore the grounds in the Gulf of Maine which were formerly productive of Northern shrimp. Bottom tows were made with a new, fine-meshed trawl net. A "tickler" chain was used on the bottom, or lead line, rather than the conventional rollers.

Paired tows were made in the formerly productive areas, and on suitable bottom adjacent areas. Other tows were made to the North because of the possibility of wholesale dislocation of the population as a consequence of the warming of waters in the Gulf of Maine in recent years.

Commercial quantities of Northern shrimp were not taken in any tow, with the largest catches being made in the vicinity of Wood Island.

Trawler to Become Research Vessel

The Boston steel trawler *Bonnie Lou* is to become a floating fisheries laboratory. The vessel has been bought by Seacoast Products Co., a fish meal plant of Lewes, Del.

It is believed that the trawler will be the first research vessel in the fisheries operated by private industry, at least on the East Coast.

New Fish Stick Plant

The Edw. W. Sawyer & Co. of Norwood, Mass., recently opened a new fish stick plant which has a capacity of 32,000 fish sticks an hour.

To insure a high cleanliness potential, not a single piece of wood was used in the 11,000 square foot plant. Automatic machines form 100 packages a minute, and each is purified by ultra-violet ray.

Designed for the highest standards of quality control, the plant has attracted nation-wide attention. Its automatic machinery permits exact control of the purity, flavor, and temperature of cooking oils.

Launches New Trap Scow

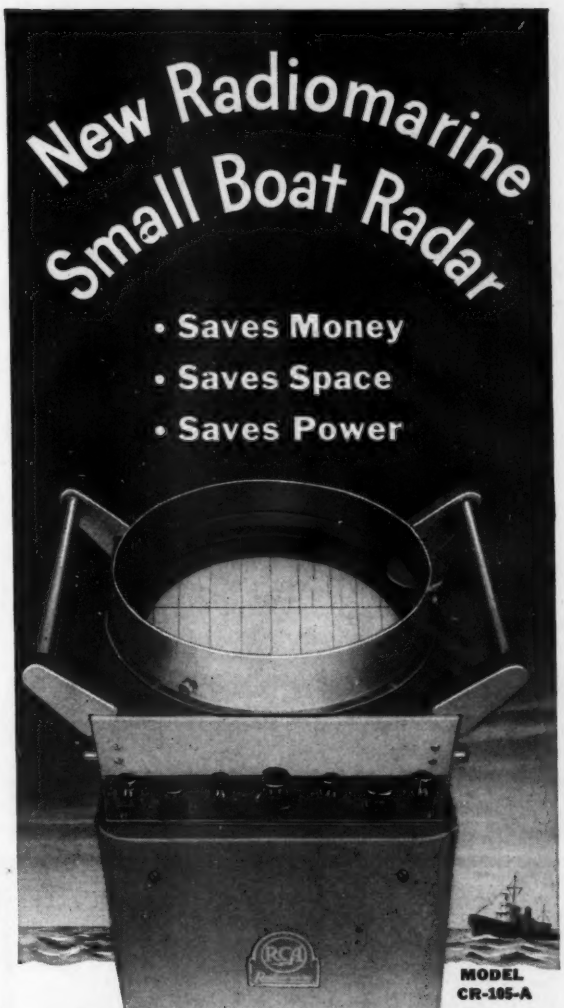
A large trap scow, built during the winter at Flyers' boat yard by Francis A. Santos was launched early last month from the boatyard railway.

The scow, named *Carol*, is 46 ft. long and 12 ft. wide. It was built for Seafood Packers, Inc., and is the first such vessel built in Provincetown during the last 30 years.

First Herring Taken from Traps

The first catch of herring of the season in Provincetown town traps, eight barrels, was brought into Monument Pier on April 14 from National traps by Capt. John Fields.

The "L. C. Mae", 36' dragger owned by Dave Sterling of Oakland Beach, R. I., and powered with a 141 hp. Chrysler gasoline engine turning Hyde propeller. She is finished with International paint, and is equipped with Nylock nets, DR-10 Bendix depth recorder, Wickwire wire rope and Columbian cordage. She uses Mobil fuel and lubricating oil.



Especially designed for vessels on which space and power are limited, Radiomarine's new CR-105-A Radar offers you the EXTRA features that give you MAXIMUM PERFORMANCE—MAXIMUM CONVENIENCE—MINIMUM MAINTENANCE. Only two basic units—indicator and antenna. Indicator is in deck mounted binnacle . . . keeps picture tube high for best viewing . . . requires less than two square feet of deck space. Antenna is lightweight . . . only 105 pounds. Instant selection of 1-2-4-12-32 mile ranges helps you navigate through foul weather and traffic hazards to cut your trip-time, boost your profits. You'll read the clear, bright pictures on its 10-inch scope easier . . . service it quicker with the easy-access chassis. And here's another saving . . . the Radiomarine CR-105-A requires only 600 watts from ship's battery or other D.C. power supply. Find out more about the new Radiomarine CR-105-A . . . it can mean greater profits for you right now.

RCA

write for free information now!

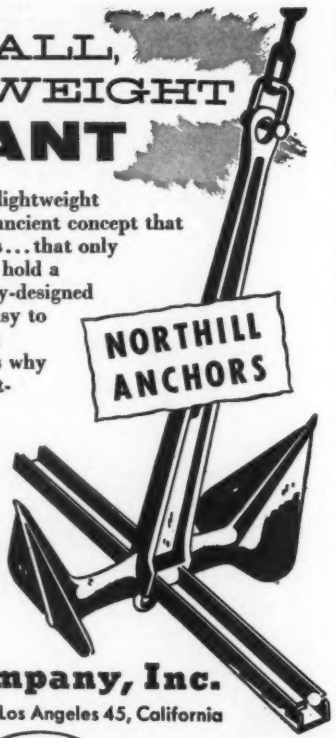
RADIOMARINE CORPORATION of AMERICA

A SERVICE OF RADIO CORPORATION OF AMERICA

75 VARICK STREET, NEW YORK 13, N.Y.

SMALL, LIGHTWEIGHT GIANT

The original Northill lightweight anchor disproved an ancient concept that had lasted 4,000 years... that only a heavy anchor could hold a boat. The scientifically-designed Northill was small, easy to handle, but a giant in holding power. That's why it has been the largest-selling lightweight anchor for 17 years! 3 to 105 lbs. For boats up to 80 ft.



Skin-Divers! See the new precision-built Northill Air Lung!

Northill Company, Inc.

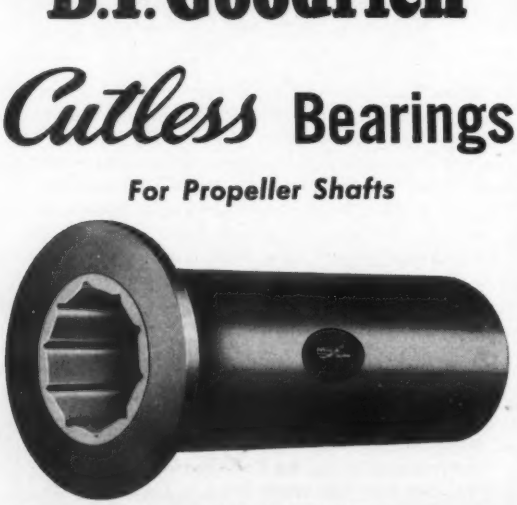
9851 So. Sepulveda Blvd., Los Angeles 45, California

A subsidiary of THE GARRETT CORPORATION

B.F.Goodrich

***Cutless* Bearings**

For Propeller Shafts



Soft rubber, water lubricated, Cutless bearings give years of trouble-free service on fishing vessels. Resist heat, oil, and wear. Quiet and protect shafts too. There is a size and type to fit your boat.

Available at Boat Repair Yards and Marine Equipment dealers.

Lucian Q. Moffitt, Inc.

AKRON 8, OHIO

Engineers and National Distributors

New Bedford Fluke Landings Increase During March

Fluke landings during March were 936,000 lbs., or 317,300 lbs. more than in March, 1954. Also, tilefish landings increased from 373,900 lbs. to 525,700 lbs. Decreases were evident in haddock landings and in cod.

During March 818,000 lbs. of scallops were landed at New Bedford, compared with 976,500 lbs. in the same month of 1954. Total production of edible fish and scallops for the month was 3,125,100 lbs., against 3,134,600 lbs. landed during March, 1954.

Fifty-six scallopers made 91 trips during the month, compared with 103 trips made by 56 vessels in March, 1954. A total of 53 draggers fished 102 times during March, while 49 vessels made 91 trips the same period last year.

Scallop Prices Drop

Sea scallop prices dipped below 50 cents a pound in April for the first time in several months in the port of New Bedford. From October 1954 until the second week in April a 60-cent per pound level was maintained, and during that time the price went as high as 68 cents a pound.

Biggest Catch of Year

The dragger *Stanley B. Butler*, owned and skippered by Capt. Olaf Anderson of So. Dartmouth, landed 121,500 lbs. of fish April 25, topping a previous high for the year of 117,000 lbs. landed April 13 by the *Pauline H.*, owned and skippered by Capt. Leif Jacobsen of Fairhaven. The big catch consisted mainly of haddock—103,000 lbs.—the balance being made up of gray sole, cod, yellowtail, blackback and sand dabs.

Overhauling and Refitting

The *Smilyn*, owned by Ed Sanchez, has been repowered with a 6-110 General Motors Diesel at the Hathaway Machinery Co., Fairhaven. A Hathaway flexible coupling has been installed aboard the *Mary J. Hayes* owned by Capt. John Murley and Capt. Bill Hayes. A new 5-blade Columbian propeller has been installed on the *Barracuda* owned by John Vieira of New Bedford, at the Plymouth Marine Railways.

The *Catherine and Mary*, owned by Ike Norton and Jens Isaksen, has been repowered with a new 6-110 Series General Motors Diesel, at D. N. Kelley & Son, Fairhaven. The *Gertrude D.* from Oak Bluffs, owned by Horace Devine, had a new shaft and a three-blade Columbian propeller installed at Kelley's, and the *Dartmouth*, owned by Slade Gorton of Gloucester, was hauled for rudder and propeller repairs. Capt. Claude Atkinson's *Annie Louise* has been painted from rail to keel with International marine paint, and William J. Collis' *Ivanhoe* has been in for a general overhaul.

Transferred to Louisiana

George W. Snow of Fairhaven, Fish & Wildlife Service marketing specialist in New Bedford for the past eight years, has been transferred to a new assignment in New Orleans, La. John V. Mahoney of Medford, currently marketing specialist in Portland, Me., will replace Mr. Snow.

Nemasket River Herring Run Underway

The annual Nemasket River herring run reached commercial proportions for the first time this year on April 5, with an initial day's catch of more than 30,000 lbs. taken from the Star Mill pool at Middleboro. A crew of 10 from the Reliable Fish Co. of Plymouth are taking the fish in a single 200-ft. seine net, from which they are loaded on waiting trucks with a bull net.

Gloucester Group Seeks Aid in Developing Block Freezing

The Gloucester Fisheries Assoc. is seeking aid under the Saltonstall-Kennedy Act on a project to develop inexpensive block freezing for Gloucester-caught fish. A request for such aid has been sent to the Fisheries Advisory Committee of the U. S. Dept. of the Interior.

The Gloucester Fisheries Assoc. also has requested the Committee to investigate what can be done to revitalize the ocean perch industry; to consider government subsidies for construction of new fishing vessels; to consider a government-financed insurance program; and to establish a fisheries technological laboratory in Gloucester.

Dragger "Ave Maria" Lost

The 70-ft. Gloucester dragger *Ave Maria* sprung a leak last month and sank in about two hours. Owner-Capt. Salvatore Curcuru and five crewmen were rescued by the 69-ft. dragger *Star of the Sea*, Capt. Ignacio Giamanco.

Landings Over One Million

Six draggers came into Gloucester on April 20th with 1,018,000 lbs. of fresh fish including 950,000 lbs. ocean perch. This was one of the biggest days for the month. The *Evelyn C. Brown* was highliner for the day with 290,000 lbs. ocean perch.

Lands Record-Size Ocean Perch

One of the largest of ocean perch was landed on April 4 by the dragger *Villanova*, Capt. Lloyd Campbell. The perch tipped the scales at 15½ lbs., according to the Fish & Wildlife Service.

The fish, 29 inches long, was a female, caught in water between 200 and 220 fathoms in the northwest quarter of Grand Bank off Newfoundland. It was estimated that the perch was between 40 or 50 years of age, and that before the spawn was removed, it weighed close to 18 lbs.

Dragger "Novelty" Goes Down

The port of Gloucester lost another fishing vessel on April 23 when the 57-ft. dragger *Novelty*, Capt. Thomas Parisi, went to the bottom after striking a submerged object. The crew of four was taken aboard the dragger *Josie II*.

Fisheries Exhibition at State House

The City of Gloucester and the Chamber of Commerce are working together to prepare an exhibit in the current series at the State House. The exhibit will open the first of June and the sea and commercial salt water fishing will be the theme. Eight of the exhibits will be 16 ft. in length and will have 8 to 10 ft. long replicas of modern Gloucester fishing draggers.

NOW IS THE TIME TO ENJOY

CAPCO-Matic

Hydraulic Reverse Gear Shifter

—the 100% hydraulic-operated equipment that makes shifting an easy, finger-tip operation from one or two stations. Ideal on commercial or pleasure boats with gasoline or diesel engines of 50 to 300 horsepower.

Takes the work out of commercial operations and adds new pleasure to recreational boating.

Don't go through another summer without CAPCO-Matic! Order your hydraulic shifter now!

Write: Marine Division (Dept. R)

CLEVELAND AERO PRODUCTS, INC.

113 St. Clair Avenue N.E. Cleveland 14, Ohio

COMPLETE REPAIR FACILITIES

OUR ALL-AROUND SERVICE includes all types of engine overhauling and repairs, rigging service, hull repairs and alterations, electrical work, etc.

YOUR ENTIRE JOB can be done quickly in our yard by experienced men.

FRANK L. SAMPLE & SON, INC.

Shipbuilders

BOOTHBAY HARBOR, MAINE

NETS • RAKES • TONGS

Bait Netting - Wire Baskets

Rope - Lobster Pot Heading Twine - Corks

LARGE STOCK

Prompt, intelligent, personal attention to your order

W. A. AUGUR, Inc.

35 Fulton Street New York 38, N. Y.

BEekman 3-0857

WALTER V-DRIVES

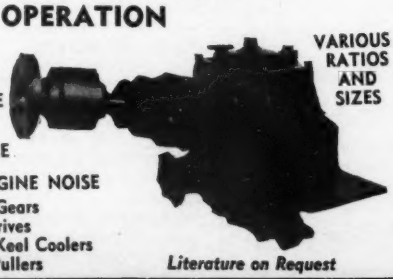
• QUIET OPERATION

• INCREASES CABIN SPACE

• INCREASES CARGO SPACE

• REDUCES ENGINE NOISE

Reduction Gears
Transfer Drives
Clean-Flo Keel Coolers
Propeller Pullers



VARIOUS RATIOS AND SIZES

Literature on Request

G. WALTER MACHINE COMPANY

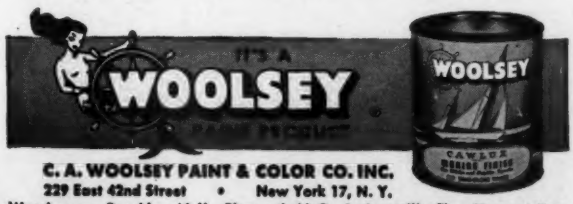
84 CAMBRIDGE AVENUE JERSEY CITY 7, N. J.

FOR WHITER, EASIER-TO-CLEAN TOPSIDES USE WORLD-FAMOUS

"CAWLUX" WHITE

In Gloss, Semi-Gloss and Semi-Flat Finishes

Smoother, longer-lasting, resists discoloration by gases and fumes



C. A. WOOLSEY PAINT & COLOR CO. INC.

229 East 42nd Street • New York 17, N. Y.

Warehouses: Brooklyn, N. Y., Plymouth, N. C., Jacksonville, Fla., Houston, Tex.

WHERE-TO-BUY DIRECTORY

Companies with asterisk have display advertisements in this issue; see Index to Advertisers for page numbers

AIR STARTING MOTORS
Ingersoll-Rand, 11 Broadway, N. Y. 4, N. Y.

ANCHORS
*Danforth Anchors, 2121 Allston Way, Berkeley, Calif.
The Maxim Silencer Co., 126 Homestead Ave., Hartford 1, Conn.
*Northill Co., Inc., Los Angeles 45, Calif.

BATTERIES—Storage
*Bowers Battery & Spark Plug Co., Reading, Pa.
Crescent Battery & Light Co., Inc., 819 Magazine St., New Orleans 12, La.
Exide Industrial Division—The Electric Storage Battery Co., 42 South 15th Street, Philadelphia 2, Pa.
*Surrette Storage Battery Co., Salem, Mass.
Willard Storage Battery Co., 246 East 131 St., Cleveland 1, Ohio.

BOOTS
*United States Rubber Co., Rockefeller Center, New York, N. Y.

CANS
Continental Can Co., 100 E. 42nd St., New York, N. Y.

CLOTHING
The H. M. Sawyer & Son Co., Cambridge, Mass.
A. J. Tower Co., 24 Simmons St., Boston, Mass.
*United States Rubber Co., Rockefeller Center, New York, N. Y.

COLD STORAGE
Quaker City Cold Storage Co., Philadelphia, Pa.

COMPASSES
John E. Hand & Sons Co., Atlantic & Washington Avenues, Haddonfield, N. J.
*Marine Compass Co., Pembroke, Mass.
Sperry Gyroscope Co., Division of the Sperry Corp., Great Neck, N. Y.
*Wilfrid O. White & Sons, Inc., 178 Atlantic Ave., Boston 10, Mass.

CORDAGE
American Manufacturing Co., Noble and West Sts., Brooklyn, N. Y.
Cating Rope Works, Inc., Maspeth, N. Y.
*Columbian Rope Co., Auburn, N. Y.
The Edwin H. Fitler Co., Philadelphia 24, Pa.
New Bedford Cordage Co., 131 Court St., New Bedford, Mass.
Plymouth Cordage Co., Plymouth, Mass.
Tubbs Cordage Co., San Francisco, Calif.
Wall Rope Works, Inc., 48 South St., New York 5, N. Y.

COUPLINGS—Marine
Morse Chain Co., 7601 Central Ave., Detroit 10, Mich.

DEPTH SOUNDERS
Bendix Aviation Corp., Pacific Div., 475 Fifth Ave., New York 17, N. Y.
*Edo Corporation, College Point, L. I., N. Y.
Kaar Engineering Corp., Palo Alto, Calif.
Raytheon Manufacturing Co., 138 River St., Waltham 54, Mass.
*Wilfrid O. White & Sons, Inc., 178 Atlantic Ave., Boston 10, Mass.

DIRECTION FINDERS
Bludworth Marine, 92 Gold St., N.Y. 7, N.Y.
Kaar Engineering Corp., Palo Alto, Calif.
Raytheon Manufacturing Co., 138 River St., Waltham 54, Mass.

ELECTRIC GENERATING PLANTS
D. W. Onan & Sons, Inc., University Ave., S. E. at 25th, Minneapolis 14, Minn.

ENGINES—Diesel
Auto-Marine Engineers, Inc., 3464 N.W. North River Dr., Miami 12, Fla.
The Buda Co., 154th and Commercial Ave., Harvey, Ill.
Burmeister & Wain American Corp., 17 Battery Place, New York 4, N. Y.
Caterpillar Tractor Co., Peoria, Ill.
Cooper-Bessemer Corp., Mount Vernon, O.
Cummins Engine Co., Columbus, Ind.
*Detroit Diesel Engine Div., General Motors Corp., Series 51, 71 and 110 Marine Diesels, 13400 W. Outer Drive, Detroit 28, Mich.
*Enterprise Engine & Machinery Co., 18th and Florida Sts., San Francisco 10, Calif.
Fairbanks, Morse & Co., Chicago, Ill.
Gray Marine Motor Co., 646 Canton Ave., Detroit, Mich.
P&H Diesel Engine Division, Harnischfeger Corp., 500 S. Main Street, Crystal Lake, Illinois.
*Kermath Manufacturing Co., 5890 Commonwealth Ave., Detroit 8, Mich.
*The Lathrop Engine Co., Mystic, Conn.
Murphy Diesel Co., 5317 West Burnham St., Milwaukee, Wis.
The National Supply Co., Engine Division, Springfield, Ohio.
*H. O. Penn Machinery Co., Inc., East River and 140th St., New York, N. Y.
*Perkins-Milton Co., Inc., 376 Dorchester Ave., South Boston 27, Mass.
Red Wing Motor & Mfg. Co., Red Wing, Minn.
Scripps Motor Co., 255 Vinewood St., Detroit 16, Mich.
Wolverine Motors Works Inc., 1 Union Ave., Bridgeport, Conn.

ENGINES—Gasoline
*Chris-Craft, Marine Engine Div., Algonac, Mich.
*Chrysler Corp., 12211 East Jefferson, Detroit, Mich.
*Ford Marined Engines, 3627 N. Lawrence St., Philadelphia 40-AF, Penna.
Gray Marine Motor Co., 646 Canton Ave., Detroit, Mich.
*Kermath Manufacturing Co., 5890 Commonwealth Ave., Detroit 8, Mich.
*The Lathrop Engine Co., Mystic, Conn.
Red Wing Motor & Mfg. Co., Red Wing, Minn.
Scripps Motor Co., 255 Vinewood St., Detroit 16, Mich.

ENGINES—Outboard
Evinrude Motors, 4670 N. 27 St., Milwaukee 16, Wis.
*Johnson Motors, 6300 Pershing Rd., Waukegan, Ill.

FISHING GEAR
*The Harris Co., Portland, Me.
*Westerbeke Fishing Gear Co., Inc., 279 Northern Ave., Boston, Mass.

FLOATS
Dale Plastics Corp., 5736 12th St., Detroit 8, Mich.
J. H. Shepherd Son & Co., Elyria, Ohio.
*B. F. Goodrich Sponge Products Division, Shelton, Conn.

GENERATING SETS
The Buda Co., 154th and Commercial Ave., Harvey, Ill.
*Detroit Diesel Engine Div., General Motors Corp., Series 51, 71 and 110 Marine Diesels, 13400 W. Outer Drive, Detroit 28, Mich.
Hallett Mfg. Co., 1601 West Florence Ave., Inglewood, Calif.

GENERATORS
The Safety Car Heating & Lighting Co., Inc., Box 904, New Haven 4, Conn.

HOOKS
*O. Mustad & Son, Oslo, Norway.
*"Pflueger": Enterprise Mfg. Co., 110 Union St., Akron, Ohio.

INSULATION
"Styrofoam" (Expanded Dow Polysytrene): The Dow Chemical Co., Midland, Mich.

LORAN
*Radiomarine Corp. of America, 75 Varick St., New York 13, N. Y.
Sperry Gyroscope Co., Division of the Sperry Corp., Great Neck, N. Y.

MOTOR GENERATORS
The Safety Car Heating & Lighting Co., Inc., Marine Div., P.O. Box 904, New Haven 4, Conn.

NETS
Adams Net & Twine Division, The Linen Thread Co., Inc., 701 N. 2nd St., St. Louis, Mo.
*W. A. Augur, Inc., 35 Fulton St., New York.
Ederer Division, The Linen Thread Co., Inc., 540 Orleans St., Chicago, Ill.
The Fish Net & Twine Company, 310-312 Bergen Ave., Jersey City, N. J.
The Linen Thread Co., Inc., 105 Maplewood Ave., Gloucester, Mass.
Moodus Net & Twine, Inc., Moodus, Conn.
Joseph F. Shea, Inc., East Haddam, Conn.
*A. M. Starr Net Co., 10 Summit Street, East Hampton, Conn.

OIL—Lubricating
Esso Standard Oil Co., 15 West 51st St., New York 19, N. Y.
*Gulf Oil Corp., Gulf Bldg., Pittsburgh, Pa.
Shell Oil Co., 50 West 50th St., New York 20, N. Y.
Socony-Vacuum Oil Co., Inc., Marine Sales Dept., 26 Broadway, New York 4, N. Y.
*Standard Oil Co. of California, Standard Oil Bldg., San Francisco, Calif.

PAINTS
The Federal Paint Co., Inc., 33 Rector St., New York 6, N. Y.
Henderson & Johnson, Inc., Gloucester, Mass.
*International Paint Co., Inc., 21 West St., New York, N. Y.
George Kirby Jr. Paint Co., 14 Wall St., New Bedford, Mass.
Pettit Paint Co., Belleville, N. J.
Pittsburgh Plate Glass Co., Pittsburgh, Pa.
Tarr & Wonson Ltd., Gloucester, Mass.
*C. A. Woolsey Paint & Color Co., Inc., 229 East 42nd St., New York 17, N. Y.

PROPELLERS
*Columbian Bronze Corp., Freeport, N. Y.
Federal Propellers, Grand Rapids, Mich.
*Hyde Windlass Co., Bath, Maine.
*Michigan Wheel Co., Grand Rapids, Mich.

PROPELLER SHAFTS
*The American Brass Co., Waterbury 20, Conn.
The International Nickel Co., Inc., 67 Wall St., New York 5, N. Y.

PUMPS
Jabsco Pump Co., 2031 N. Lincoln St., Burbank, Calif.

RADAR
*Radiomarine Corp. of America, 75 Varick St., New York 13, N. Y.
Raytheon Mfg. Co., 138 River St., Waltham 54, Mass.

RADIO TELEPHONES
Applied Electronics Co., Inc., 1246 Folsom St., San Francisco, Calif.

Bludworth Marine, 92 Gold St., New York 38, N. Y.
*Hudson American Corp., 25 West 43rd St., New York 18, N. Y.
Kaar Engineering Corp., Palo Alto, Calif.
*Radiomarine Corp. of America, 75 Varick St., New York 13, N. Y.
Raytheon Mfg. Co., 138 River St., Waltham 54, Mass.

RANGES—Galley
Elisha Webb & Son Co., 135 So. Front St., Philadelphia 6, Pa.
The Marine Mfg. & Supply Co., 34 New Street, New Brunswick, N. J.

REDUCTION GEARS
*Snow-Nabstedt Gear Corp., Welton St., Hamden, Conn.
Twin Disc Clutch Co., 1341 Racine St., Racine, Wis.
*G. Walter Machine Co., 84 Cambridge Ave., Jersey City 7, N. J.

REVERSE GEAR SHIFTER
*Cleveland Aero Products, Inc., 113 St. Clair Ave., N.E., Cleveland 14, Ohio.

RUST PREVENTIVE
*Sudbury Laboratory, Box 780, South Sudbury, Mass.

SEAM COMPOUNDS
L. W. Ferdinand & Co., Inc., Mica Lane, Newton Lower Falls 62, Mass.

SEARCHLIGHTS
Portable Light Co., Inc., 216 William St., New York 7, N. Y.

SHIPBUILDERS
Blount Marine Corp., Warren, Rhode Island.
Conrad Industries, Morgan City, La.
Diesel Engine Sales Co., St. Augustine, Fla.
Harvey F. Gamage, So. Bristol, Maine.
*Morehead City Shipbuilding Corp., Morehead City, N. C.
*Frank L. Sample & Son, Inc., Boothbay Harbor, Me.

SILENCERS
The Maxim Silencer Co., 126 Homestead Ave., Hartford 1, Conn.

STEERING GEAR
The Edson Corp., 141 Front St., New Bedford, Mass.
Metal Marine Pilot, 342 Golden Gate Ave., Tacoma, Wash.
Sperry Gyroscope Co., Division of the Sperry Corp., Great Neck, N. Y.

STERN BEARINGS
*"Goodrich Cutless": Lucian Q. Moffitt, Inc., Akron 8, Ohio.
Hathaway Machinery Co., Inc., New Bedford, Mass.
Byron Jackson Co., PB Division, Box 2593, Terminal Annex, Los Angeles 54, Calif.

VALVES
Fabri-Valve Co. of America, 2100 No. Albina Ave., Portland 12, Ore.

V-BELTS
*Flexible Steel Lacing Co., 4683 Lexington St., Chicago 44, Ill.

VOLTAGE REGULATORS
The Safety Car Heating & Lighting Co., Inc., Box 904, New Haven 4, Conn.

WINCHES
Bodine & Dill (formerly Hettinger Engine Co.), Bridgeton, N. J.
Hathaway Machinery Co., Inc., New Bedford, Mass.
New England Trawler Equipment Co., 300 Eastern Ave., Chelsea 50, Mass.
*Stroudsburg Engine Works, 62 North 3rd St., Stroudsburg, Penn.

WIRE ROPE
American Steel & Wire Division, United States Steel, Rockefeller Bldg., 614 Superior Ave., Cleveland 13, Ohio.
*John A. Roebling's Sons Co., Trenton 2, N. J.
Wickwire Spencer Steel Division of The Colorado Fuel & Iron Corp., Palmer, Mass.

FOREIGN BAILINGS

"FISHING BOATS OF WORLD," a 600-page book, has been published by Food and Agriculture Organization of United Nations. It contains 70 papers presented at an FAO-sponsored World Fishing Boat Congress held in 1953. The book is illustrated by 300 photographers and 300 detailed drawings on boat construction and design.

JAPANESE CANNING FLEET for salmon and crab will be increased by 11 vessels in 1955. Two new salmon canning factoryships will be built, and nine former cargo vessels will be converted to canning factoryships for salmon and crab production.

GREENLAND WOLFFISH TAKES were very good during the Winter. At Sukkertoppen the abundance of wolffish (ocean catfish) has been greater than ever before, so that line fishermen have been exceptionally busy. The catch is filleted and frozen for the United States market.

FREEZING OF FISH AT SEA will be done by British trawler which sailed from Hull recently, first for sea trials and then for series of experimental voyages which are expected to go on for about a year. Initial venture is being financed by White Fish Authority, Government, and Distant-Water Trawler Owners, and is aimed at improving quality of fish landed; diverting part of catch to offpeak selling periods of year and fishing more economically. Immediate object is to freeze only early part of catch, some 2¼ tons, and cold store it at temperature of minus 20°F.

The vessel selected for the experiment, the *Northern Wave*, is an oil-fired steam trawler 188 ft. in length, with a hold capacity of about 18,000 cubic feet. The craft has been equipped with additional generators, and the crew will be increased by two, normal being 20. The forward part of the vessel's fish hold was converted to cold store, and ahead of that is freezing equipment, whole unit being so compact that hold capacity still will permit ship to return with larger than average catch.

JAPANESE EXPERIMENT on earlier trawling for sole in North Pacific was expected to begin during March. The 933-ton trawler *Asama Maru* was to engage in trawling for sole in Bristol Bay and North Pacific in an effort to determine if this fishing may be commenced profitably earlier than May. Another objective is to obtain further comparative figures as to relative economy of independent trawling, as compared to mothership expeditions.

Index to Advertisers

The American Brass Co. 35
W. A. Augur, Inc. 47
Bowers Battery & Spark Plug Co. 50
Chris-Craft, Marine Engine Div.. 28
Chrysler Corp., Marine Engine Div. 51
Cleveland Aero Products, Inc..... 47
Columbian Bronze Corp..... 39
Columbian Rope Co..... 1
Danforth Anchors 31
Detroit Diesel Engine Div., General Motors Corp..... 52
Diesel Corp. of N. J..... 50
Edo Corporation..... 3
Eldredge-McInnis, Inc..... 44
Enterprise Engine & Machinery Co. 43
The Enterprise Mfg. Co..... 29
Flexible Steel Lacing Co..... 43
General Motors Corp., Detroit Diesel Engine Div..... 52
Gulf Oil Corp..... 10
The Harris Co..... 50
Geerd N. Hendel..... 50
Hudson American Corp..... 42
Hyde Windlass Co..... 42
International Paint Co., Inc..... 41
Johnson Motors..... 25
Kermath Mfg. Co..... 40
The Lathrop Engine Co..... 38
Marine Compass Co..... 38
Wm. M. McClain, Inc..... 50
Michigan Wheel Co..... 33
Lucian Q. Moffitt, Inc..... 46
Morehead City Shipbuilding Corp. 44
O. Mustad & Son..... 39
Northill Co., Inc..... 46
H. O. Penn Machinery Co., Inc..... 7
Perkins-Milton Co., Inc..... 7
Radiomarine Corp. of America..... 45
John A. Roebling's Sons Co..... 33
Frank L. Sample & Son, Inc..... 47
Snow-Nabstedt Gear Corp..... 9
Sponge Products Div., B. F. Goodrich Co..... 6
Standard Oil of California..... 2
A. M. Starr Net Co..... 27
Stroudsburg Engine Works..... 27
Sudbury Laboratory 30
Surrette Storage Battery Co..... 4
U. S. Rubber Co..... 34
G. Walter Machine Co..... 47
Westerbeke Fishing Gear Co..... 50
Wilfrid O. White & Sons, Inc..... 44
C. A. Woolsey Paint & Color Co... 47

CLASSIFIED ADVERTISING

Rates: $1.00 per line, $5.00 minimum charge. Count 9 words to a line. Closing date, 25th of month. National Fisherman, Goffstown, N. H.

FOR SALE

Cruisers, draggers, auxiliaries—all types and sizes. If you are in the market for anything in that line, please write us—no inquiry too small to merit attention. KNOX MARINE EXCHANGE, INC., CAMDEN, MAINE.

ENGINES FOR SALE

Fully rebuilt 90 hp. and guaranteed gasoline marine engines, $495.00. Write for bargain list. Osco Motors Corp., Philadelphia 40-AF, Penna.

GOVERNMENT SURPLUS BULLETIN

Save, buy direct from U. S. Government. Surplus boats, engines, tools, machinery, trucks, jeeps, etc. Send $1.00 for Government Surplus Bulletin to Box 169 AP, East Hartford 8, Conn.

ENGINE PARTS FOR SALE

New surplus Chris-Craft water pump, $20; "160" heads, $30; Chrysler pump, $30; head, $20; blocks, $90. Other parts and marine engines. J. Helwege, 741 S. Ocean, Freeport, N. Y.

DRAGGER "VAGABOND" FOR SALE

Eastern type, built 1948, 64' long, 17' beam, 10' draft. Ices 60,000 lbs. fish, 265 hp. Hendy Diesel, Hathaway deck gear, Bendix fathometer, direction finder, Loran, radio-telephone. Ruggedly built, now fishing. Reasonable. Harold B. Essington, 24 W. Park Ave., Pleasantville, New Jersey. Tel 2133.

TWO TRAWLERS FOR SALE

Two 67 x 18 ft. shrimp trawlers built by Diesel Engine Sales, St. Augustine, Fla., Nov. 1953. 135 hp. Caterpillar Diesel. Equipped complete for tough and long trips to Campeche, Mexico. No reasonable offer refused. S. Ursino, 2134 Lee St., Fort Myers, Fla.

DRAGGER "AVE MARIA" FOR SALE

65 ft. dragger *Ave Maria* with 2-year-old Cummins Diesel engine, 175 hp., reduction gear 3 to 1. Fully equipped and in very good condition. Now fishing. Radio-telephone and Fathometer. Frank Marino, 301 North St., Boston, Mass. Tel. No. RI-2-0975.

GOVERNMENT SURPLUS FOR SALE

New starters to fit G.M. 2-71, 3-71, 4-71 and 6-71, Model 1108732 made by Delco Remy—$14.00 each; water-cooled exhaust manifolds for G.M. 71—$60.00 each; water-cooled Chrysler manifolds for M-8—$40.00 each; Borg Warner reverse and reduction gears—$65.00 each. Electro Diesel Corp., P. O. Box #4842, Normandy Branch, Miami Beach 41, Florida.

DIESEL BARGAINS

Good used and rebuilt Diesel marine engines, accessories and Diesel generator plants. G.M.'s 6-71, Superior MRD-8, Cat D-4600, Lathrops D-50, DA-Budas, Atlas 10 x 13, also 7 x 8½, and others. Some matched pairs. Gulf-Atlantic Repair & Trading Co., 300 S. W. 2nd St., Phone 32832, Miami, Fla.

ENGINES FOR SALE

Two Caterpillar Model D13000 marine engines. Rebuilt and fully equipped for fishing or shrimping with Twin Disc 2:1 gear and front power take-off. One Wolverine Model N-1, 210 hp. @ 600 rpm., direct reversible. One General Motors Model 6-110 in good condition with 3.75:1 marine gear. Virginia Tractor Co., Inc., P. O. Box 1638, Richmond 13, Virginia.

OYSTER BOAT FOR SALE

Oyster dredge boat *I. E. Brown*, 80' x 22'2", draft 8'. Capacity 2000 bu. Powered by a 210 hp. 6-cylinder direct reversing Wolverine Diesel. Can be used as a lighter. Quick sale. F. F. Brown & Son, 494 Quinnipiac Ave., New Haven 13, Conn.

BOWERS BATTERIES

Always Better

BOWERS BATTERY & SPARK PLUG CO., READING, PA.

THE HARRIS COMPANY
PORTLAND, MAINE
Specializing in Fishing Boat Supplies
Marine Hardware — Dragging Equipment
Electronics — Fuel — Groceries

ATTENTION!
G. M. DIESEL OWNERS
New Surplus in Large Quantities
DIESEL CORP. OF N. J.
Large selection of engines and parts, starters, generators, pumps, all types; voltage regulators, filters, all types; reduction gears, all types.
6-71 MARINE ENGINES— $1450 and up
79 Ogden St., Newark, N. J. Humbolt 2-7881

GEERD N. HENDEL
NAVAL ARCHITECT
Designer of Fishing and Commercial Vessels of All Types
CAMDEN, MAINE
Specializing in Aluminum Alloy Hull and Deckhouse Construction
TELEPHONE 3097

Commission Merchants and Wholesale Dealers in
ALL TYPES OF FROZEN SEAFOOD
WM. M. McCLAIN, INC.
231 S. FRONT ST. PHILADELPHIA, PA. 230 S. WATER ST.

WESTERBEKE FISHING GEAR CO., INC.
Grimsby Trawls
Wesco Cod-end Protectors
Wire and Manila ropes
— *Distributors* —
Boston 10, Mass.
Also store and warehouse Gloucester, Mass.
Marine Hardware
Danforth Anchors
Paints — Fittings

"Tag Day" for King Salmon

AT THE RIGHT . . . . Clarence Anderson, Director Alaska Department of Fisheries at Juneau, Alaska, watches as Stanley Swanson, Department District Inspector at Ketchikan, releases a tagged king salmon. (Note tag near dorsal fin.) Recapture of these tagged fish reveals important information as to the migration patterns and the home streams producing them. All Pacific salmon die after spawning.

Work of this nature requires the services of O'KETA (below), the Department's 32-foot modified gill-net boat built in 1953 by Commercial Marine Construction Company of Seattle, Washington from design of William Garden N.A., Seattle. O'KETA is powered with Chrysler Marine Engine, 2½ to 1 reduction gear.

Install a Chrysler Marine Engine... the only marine engine that gives you all these "extras" at no extra cost.

- Storage Battery • Shifting Lever
- Right or Left Rotation Engine
- Full-Flow Oil Filter

CHRYSLER
ROYAL V SPECIAL
150 H.P. MARINE ENGINE

Alaska Department of Fisheries relies upon Chrysler Marine Power

Clarence Anderson, Director of Alaska Department of Fisheries writes from Juneau: **"Our biological and fish-life studies along Alaskan coastal and inland waters require a dependable boat, dependably powered. In this work O'KETA is used from early spring to late fall. Boat and Chrysler Engine have met all our requirements."**
District Inspector Stanley Swanson adds, **"Chrysler Engine performs satisfactorily at all speeds necessary in our work. It's a completely reliable power plant."**

Idling adjusted for easy trolling, instant-response acceleration, sustained speed when you need it, dependable forward and reverse gearing—when reports of "complete reliability" come in, you may be sure that behind them are *all* these vital marine engine characteristics. Put the best in your boat—power with Chrysler. See your nearby Chrysler Marine Engine Dealer for detailed information on Chrysler Engines, 95 to 200 h.p., or write for catalog: ***Dept. 125, Marine Engine Division, Chrysler Corporation, Trenton, Michigan.***

America's No. 1 Marine Engine

CHRYSLER

MARINE ENGINE DIVISION • CHRYSLER CORPORATION

GM DIESEL
CASE HISTORY No. 155-1AFSS

BOAT AND OWNER: 65-foot shrimp trawler "DONNA JEAN" owned and operated by Captain Arthur Miller of Rockport, Texas.

INSTALLATION: General Motors "6-110" Marine Diesel swings 50" x 44" screw through 4½:1 reduction gear.

PERFORMANCE: "DONNA JEAN" measures 65' x 18'6" x 8', has speed of 10 knots. Built by Jackson Marine Services, Rockport, Texas, builders of "20-year trawlers." Captain Miller also operates GM Diesel-powered "TEXAS 14" trawler.

GM
GENERAL MOTORS
DIESEL POWER

Years of Low-Cost Trouble-Free Service sells another GM DIESEL

The General Motors Diesel-powered "TEXAS 14" had seen a lot of service when Captain Miller bought it in 1951. Yet for 3 years, the General Motors Model "6-71" 2-cycle Diesel gave him such economical, trouble-free service that Captain Miller *specified* GM "6-110" Diesel power for his new boat.

There are reasons aplenty for specifying a GM "6-110" Diesel in new boats or when repowering your present craft.

You'll save money because a GM "6-110" Marine Diesel lists for up to 53% *less* per continuous horsepower than other Marine Diesels of comparable power. It weighs as much as 61% *less*, frees hull space for more pay load because it's more compact than other Marine Diesels in its range.

Fast-accelerating GM 2-cycle Diesel operation gets you out to the grounds and back into port with your catch ahead of the fleet.

General Motors Marine Distributors cover the water front with day-or-night service and genuine factory parts. Drop in on your local dealer next time you're in port—he'll show you why a GM Diesel is your best buy.

DETROIT DIESEL ENGINE DIVISION
GENERAL MOTORS • DETROIT 28, MICHIGAN
Single Engines . . . 30 to 300 H.P. Multiple Units . . . Up to 893 H.P.

Sales, Factory-Engineered Parts and Authorized Service through distributors and dealers in all important marine locations. SEE your local Telephone Classified Directory or write, wire or phone for name of nearest Distributor.